BANGALORE ELECTRICITY SUPPLY COMPANY LIMITED

(WHOLLY OWNED GOVT. OF KARNATAKA UNDERTAKING)

REQUEST FOR PROPOSAL (RFP)

BESCOM invites Electronic Bids from eligible Bidders

For the Work mentioned below, under Competitive Bidding against tender enquiry no.

BESCOM/2025-26/IND0186/CALL-2 dated 28.01.2026

For

Augmentation and Comprehensive Maintenance of Existing Automatic Meter Reading (AMR) system for HT installations in RAPDRP areas of BESCOM for five years.

Issued by:
The General Manager (ICT&MIS),
BESCOM, Belaku Bhavana, Corporate office
K.R Circle, Bangalore-560001

DISCLAIMER

This Request for Proposal (RFP) is for Selection of Bidder for "Augmentation and Comprehensive Maintenance of Existing Automatic Meter Reading (AMR) system for HT installations in RAPDRP areas of BESCOM for five years".

Whilst the information in this RFP has been prepared in good faith, it is not and does not purport to be comprehensive or to have been independently verified. Neither BESCOM, nor any officers or employees, nor any of their advisers, nor consultants accept any liability or responsibility for the accuracy, reasonableness or completeness of the information contained in the RFP, or for any errors, omissions or misstatements, negligent or otherwise, relating to the proposed project, or makes any representation or warranty, express or implied, with respect to the information contained in this RFP or on which this RFP is based or with respect to any written or oral information made or to be made available to any of the recipients or their professional advisers and, so far as permitted by law and except in the case of fraudulent misrepresentation by the party concerned, and liability therefore is hereby expressly disclaimed.

The information contained in this RFP is selective and is subject to updating, expansion, revision and amendment at the sole discretion of BESCOM. It does not, and does not purport to, contain all the information that a recipient may require for the purposes for making a decision for participation in this process. BESCOM shall not be responsible for any direct or indirect loss or damage arising out of or for use of any content of the RFP in any manner whatsoever.

This RFP includes certain statements, projections, targets and forecasts with respect to the Project. Such statements, projections, targets and forecasts reflect various assumptions made by the management, officers, employees, consultants, and experts of BESCOM, which (the assumptions and the base information on which they are made) may or may not prove to be correct. No representation or warranty is given as to the reasonableness of forecasts or the assumptions on which they may be based and nothing in this RFP is, or should be relied on as, a promise, representation or warranty.

BESCOM shall be the sole and final authority with respect to qualifying a bidder through this RFP. The decision of BESCOM in selecting the Agency who qualifies through this RFP shall be final and BESCOM reserves the right to reject any or all the bids without assigning any reason thereof. BESCOM may terminate the RFP process at any time without assigning any reason and upon such termination, BESCOM shall not be responsible for any direct or indirect loss or damage arising out of such a termination.

The Bidder shall bear all its costs associated with or relating to the preparation and submission of its Proposal including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by the BESCOM or any other costs incurred in connection with or relating to its Proposal (Bid). All such costs and expenses will remain with the Bidder and the BESCOM shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder in preparation or submission of the Proposal (Bid) regardless of the conduct or outcome of the selection process

Contents

DISCLAIMER 1-2

1. Section I: INVITATION FOR BIDS 1-7

1.1 ABOUT BESCOM 1-7

1.2 OBJECTIVE 1-7

1.3 KEY EVENTS AND DATES 1-8

1.4 ELIGIBILITY CRITERIA 1-8

1.5 CONTRACT PERIOD 1-13

1.6 BID SUBMISSION 1-13

2. Section II: INSTRUCTIONS TO BIDDERS 1-15

2.1. INSTRUCTION: 1-15

2.2. COST OF BIDDING: 1-15

2.3. UNDERSTANDING OF BID DOCUMENTS 1-15

2.4. LANGUAGE OF BID 1-15

2.5. CURRENCIES OF BID 1-15

2.6. BID VALIDITY 1-16

2.7. EARNEST MONEY DEPOSIT (BID GUARANTEE) 1-16

2.8. DEADLINE FOR SUBMISSION OF BIDS 1-16

2.9. MODIFICATION AND WITHDRAWAL OF BIDS 1-17

2.10. FORMAT OF BID 1-17

2.11. CONTENTS OF TENDER DOCUMENT 1-17

2.12. BIDDER TO OBTAIN HIS OWN INFORMATION 1-17

2.13. CLARIFICATION ON TENDER DOCUMENT 1-18

2.14. AMENDMENT OF BIDDING DOCUMENT 1-18

2.15. GENERAL INSTRUCTION FOR BID PREPARATION 1-19

2.16. PREPARATION OF BID/PROPOSAL 1-19

2.17. FINANCIAL BID/PROPOSALS 1-19

2.18. RIGHT OF PURCHASER TO ACCEPT OR REJECT 1-20

2.19. BID OPENING 1-20

2.20. BID EVALUATION 1-20

2.21. NEGOTIATIONS 1-21

2.22. AWARD CRITERIA 1-22

2.23. NO COMMITMENT TO ACCEPT LOWEST OR ANY TENDER 1-22

2.24. RIGHT TO ACCEPT/REJECT ANY OR ALL BIDS 1-22

2.25. NOTIFICATION OF AWARD 1-22

3. Section III: GENERAL CONDITIONS OF CONTRACT (GCC) 1-23

3.1.	**BID PRICES**	**1-23**
3.2.	**PERFORMANCE GUARANTEE**	**1-23**
3.3.	**LIQUIDATED DAMAGES**	**1-23**
3.4.	**PAYMENT CLAUSE**	**1-24**
3.5.	**TERMS OF PAYMENT**	**1-25**
3.6.	**PENALTY**	**1-26**
3.7.	**TERMINATION OF CONTRACT**	**1-27**
3.8	**TERMINATION FOR INSOLVENCY**	**1-28**
3.9	**TERMINATION FOR CONVENIENCE**	**1-28**
3.10	**LIMITATION OF LIABILITY**	**1-28**
3.11	**FORCE MAJEURE**	**1-29**
3.12	**SETTLEMENT OF DISPUTES**	**1-30**
3.13	**RISK PURCHASE CLAUSE**	**1-31**
4. Section IV: SPECIAL CONDITIONS OF CONTRACT		**1-32**
5. Section V: SCOPE OF WORK		**1-35**
5.1 BACKGROUND		**1-35**
5.2	**CURRENT STATUS:**	**1-37**
5.3	**DETAILED SCOPE OF WORK:**	**1-38**
5.3.1	**Survey (The bidder shall submit compliance post survey):**	**1-38**
5.3.2	**Phase-wise replacement of existing GPRS modems with 4G modems:**	**1-38**
5.3.3	**SIMs and Connectivity:**	**1-39**
5.3.4	**MDAS (Meter Data Acquisition System):**	**1-39**
5.3.5	**Comprehensive Maintenance of Existing, Replaced and incremental modems:**	**1-39**
5.3.6	**Training:**	**1-41**
A.	**End-User Training for BESCOM Officers:**	**1-41**
B.	**Administrator Training**	**1-42**
5.3.7	**Handing-over of Assets:**	**1-42**
6. Section VI: TECHNICAL SPECIFICATION		**1-44**
6.1 OBJECTIVE		**1-44**
6.2 TECHNICAL SPECIFICATION OF MODEM WITH BUILT IN BLUETOOTH:		**1-44**
7	**SECTION VII SAMPLE FORMS**	**1-52**
Form 1: Bidder's Organization details (To be uploaded on the Letterhead)		**1-52**
Form 2: Declaration on not being blacklisted /defaulter		**1-53**
Form 3: Declaration of Acceptance of Terms and Conditions in RFP		**1-54**
Form 4: Letter of Proposal Submission		**1-55**
Form 5: Performa for Contract Performance Guarantee		**56**

Form 6: Price Bid (To be submitted through online mode only) **58**

Form 7: Banker's Certificate **59**

Form 8: Bidder of a country which shares a land border with India **60**

Form 9: Manufacturer's Authorization form (MAF) **61**

Annexure I: Mandatory General Technical Particulars **62**

Annexure II: ABBREVIATIONS **65**

Letter of Invitation to Bidders

Tender Reference no.	Tender enquiry No: BESCOM/2025-26/IND0186/CALL-2 dated 28.01.2026
Name of the Organization	Bangalore Electricity Supply Company Ltd. (BESCOM)
Title of Works	Augmentation and Comprehensive Maintenance of Existing Automatic Meter Reading (AMR) system for HT installations in RAPDRP areas of BESCOM for 5 years

Dear Sir/Madam,

BESCOM (hereinafter called "Purchaser") is floating RFP for "Augmentation and Comprehensive Maintenance of Existing Automatic Meter Reading (AMR) system for HT installations in RAPDRP areas of BESCOM for 5 years"

More details on the services are provided in the Terms of Reference in this RFP document.

1) The RFP includes the following documents:

Section I - Invitation for Bids

Section II - Instructions to Bidders

Section III - General Conditions of Contract

Section IV - Special Conditions of Contract

Section V - Scope of Work

Section VI - Technical Specification

Section VII - Forms

2) You are invited to submit your proposal as per the attached RFP document.

Yours sincerely,

Sd/
General Manager (ICT& MIS)
BESCOM

1. Section I: INVITATION FOR BIDS
BESCOM/2025-26/IND0186/CALL-2 dated 28.01.2026

1.1 ABOUT BESCOM

BESCOM – Bangalore Electricity Supply Company Limited is responsible for power distribution in eight districts of Karnataka. BESCOM covers an area of 41,092 sq. kms with a population of over 207 lakhs. The company has 4-operating Zones – Bangalore Metropolitan Area Zone (North), Bangalore Metropolitan Area Zone (South), Bangalore Rural Area Zone (BRAZ) and Chitradurga Zone (CTAZ), 9 Circles, 32 Divisions, 147 Sub-divisions and 534 Section Offices or O&M offices under RAPDRP area.

1.2 OBJECTIVE

The main objective is "Augmentation and Comprehensive Maintenance of Existing Automatic Meter Reading (AMR) system for HT installations in RAPDRP areas of BESCOM for five years". The total contract period is for Five Years.

SCOPE:

1. Supply of 4G Enabled Modems, Cables and accessories for connecting the meters for Data Collection and transmission infrastructure/device
2. Installation, Commissioning of Modems i.e. configuration of SIM card and Integration to MDAS server and pushing data to MDM server.
3. Maintenance Cost for 5 years= MDAS Charges, Data Charges, Connectivity Charges, Troubleshooting,

Sl No	Particulars	Contract Duration
1	Augmentation and Comprehensive Maintenance of Existing Automatic Meter Reading (AMR) system for HT installations in RAPDRP areas of BESCOM for 5 years	5 years

The AMR system is to acquire meter data from HT consumer meters automatically from their remote locations avoiding any human intervention and provide data for monitoring parameters, accurate billing purposes and generate exceptions

The above objective is achieved by providing an Automatic Meter Reading (AMR) based Data Logging System using Communication Technologies (currently modems use GPRS shoule be upgraded to LTE 4G) covering HT Consumer Meters in the entire RAPDRP area of BESCOM.

1.3 KEY EVENTS AND DATES

1	Tender Inviting Authority	GM (IT) BESCOM
2	Date of Publication of RFP	As per KPP Portal
3	Pre-Bid meeting	As per KPP Portal
4	Last date of Receiving Queries/ Clarification	Queries if any may be sent to gmit@bescom.co.in on or before date mentioned as per KPP
5	Last Date of Submission of bids	As per KPP portal
6	Earnest Money Deposit payable	1% of the total amount put to tender. For details refer EMD clause.
7	Amount put to tender	**Rs. 14,46,31,500/-**
8	Date, Time of Opening of Techno-Commercial Bid	As per KPP Portal
9	Date, Time of Opening of Financial Bid	As per KPP Portal

1.4 ELIGIBILITY CRITERIA

Pre-qualifying requirements for selection of Bidders are mentioned here under

The following documentary evidence in respect of qualifying requirements shall be uploaded by the Bidder in the form of electronic/scanned copies in the KPP portal by the participating Bidders.

Sl No	Requirement Description	Documents to be uploaded
A	**Technical Criteria**	
1	The Bidder should be in existence of any of the following: Companies incorporated in India under the Companies Act, 1956/2013 including any amendments thereto;	Certificate of Incorporation issued by Registrar of Companies of Companies Act 1956/2013 along with Memorandum of Association and Articles of Association of the company Annual filings (E-forms AOC-4, MGT-7) filed by the Company to Registrar of Companies (Ministry of Corporate Affairs, Government of India) for preceding two financial years Declaration from Directors of the Company stating that they are not disqualified to be a Director of the Company along with the list of Companies in which they are Directors as on the date of inviting tender (s)
	LLP incorporated in India under the Limited Liability Partnership (LLP) Act, 2008 including any amendment thereto;	Certificate of incorporation issued by Registrar of Companies as per LLP Act 2008. Limited Liability Partnership Agreement of LLP

		Form 11- Annual Return filed by LLP to Registrar of Companies (Ministry of Corporate Affairs, Govt. of India)
	(i) Partnership firm under Partnership Act, 1932 in India; (ii) Sole Proprietorship Concern	Partnership Deed, GST Registration Certificate. Shops and Establishment Registration Certificate, as applicable. PAN/ Registration Certificate
2	The bidder should either be the Original Equipment Manufacturer or an Authorized licensed agent/dealer for Supply, installation, commissioning of Modems and Meter Data Acquisition (development and customization of software, and/or commissioning AMR/Meter Data logging system).	Self-Declaration in case of OEM Or Letter of Manufacturers' Authorization Form (MAF) issued by the OEM in case of Authorized agency of OEM.
3	The Bidder should have obtained orders for Supply, Installation, Commissioning of Modems , Development and Customization of Meter Data Acquisition Software, and/or Commissioning of AMR/Meter Data Logging System which shall not be less than 80% (10,151 Nos of Modems) of the tendered quantity for Power utilities across India in any one of the last three financial years (2022-23, 2023-24, 2024-25). However, it will be 40% (5,076 Nos of Modems) in case of Micro and Small Enterprise) for Power utilities across India in any one of the last two financial years (2023-24, 2024-25).	Purchase order copies or Contract order copies issued by Power utilities in India for Supply, Installation, Commissioning of Modems , Development and Customization of Meter Data Acquisition Software, and/or Commissioning of AMR/Meter Data Logging System. Performance certificate issued by the officer not below the rank of DGM/Executive Engineer or Equivalent officer.
4	The bidder shall have their own Meter Data Acquisition System (MDAS) application which shall be fully compatible and operable with both the existing modems presently deployed in the utility's network as well as the proposed replacement modems to be supplied under this project.	Self-declaration by the bidder confirming ownership of the MDAS software. Proof of prior deployment of the above MDAS in power utilities across India (work order and Performance certificate issued by the officer not below the rank of DGM/Executive Engineer or Equivalent officer performance certificate).
5	The bidder shall have valid Type Test reports for 4G Modems not older than 5 years as on date of this RFP for similar/same design as per relevant Indian Standard which has successfully passed relevant type tests at CPRI/ ERDA/NPL/ERTL or any other NABL accredited laboratory.	Valid type test reports.
6	The Bidder shall have their own Research & Development Centre, technical and support team to complete the work within the	Self-declaration.

	stipulated time.	
7	The Bidder should upload the mandatory technical specification compliance of the Modem intended to be supplied.	Mandatory Technical Specifications as provided by OEM to be submitted.
8	The Bidder must have valid ISO 9001:2015 and ISO 27001:2018	Valid Certificate ISO 9001:2015 and ISO 27001:2018 as on the date of submission of bids
B	**Financial Criteria**	
9	The annual turnover of the bidder should not be less than 100% (in case of Micro & Small Enterprises, the annual turnover shall not be less than 50%) of the amount put to tender in any one of the financial years of the preceding five years (i.e., 2020-21, 2021-22, 2022-23 & 2023-24, 2024-25).	Certified copies of P&L Statement, Balance sheets and Audited Financial Statement duly signed and sealed by CA.
10	The Liquid Assets as on 31.10.2025 or at a later date before the submission of the bid consisting of Cash at Bank + Term Deposits + availability of fund based credit facility in any Nationalized/ scheduled Bank shall not be lesser than 25% of the amount put to tender. If the bidder has banking with more than one Bank, then the available liquid assets balance mentioned above on a particular date i.e., as on 31.10.2025 or any date before submission of bids shall be the same date for all the banks.	The cash at Bank, Term Deposits and the availability of fund based credit facility shall be supported by a certificate issued by any Nationalized/Scheduled Bank with whom the bidder has banking facilities. In case of Fund based credit facility, the certificate issued by the Nationalized/ Scheduled Bank duly mentioning sanctioned limits, funds utilized so far and balance available as on 31.10.2025 or at a later date, before submission of the bid.
C	**Others**	
11	Any Bidder from a country which shares a land with India will be eligible to bid in this tender only if the Bidder is registered with the Competent Authority. A certificate for having read the clauses is required to be submitted/uploaded by the Bidder separately in the following format: I have read the clause regarding restrictions on procurement from a Bidder of a country which shares a land border with India; I certify that this Bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this Bidder fulfils all requirements in this regard and is eligible to be considered. (Where applicable, evidence of valid registration by the	A copy of Registration certificate issued by the Indian competent authority. In case the same doesn't apply, Self-declaration by the bidder in Rs. 500 Stamp paper duly notarized shall be uploaded.

	Competent Authority shall be attached.)	
12	The Bidder must not have defaulted in providing services against any of the previous purchase orders placed by BESCOM or any other utilities as on the date of bid opening.	Self-declaration by the Bidder in Rs. 500 Stamp paper duly notarized shall be uploaded.
13	The Bidder must not have been blacklisted by any Government Department (State and Central Government) or PSUs or Private Company as on the last date of submission of Bid.	Self-declaration by the Bidder in Rs. 500 Stamp paper duly notarized shall be uploaded.

Note: 1. Clarification to the Sl. No. 9 above are as follows

Bidder (including the term tenderer, Consultant or service provider in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated here in before, including any agency branch or office controlled by such person, participating in a procurement process.

"Bidder from a country which shares a land border with India" for the purpose of this Order means:

a. An entity incorporated, established or registered in such a country; or
b. A subsidiary of an entity incorporated, established or registered in such a country; or
c. An entity substantially controlled through entities incorporated, established or registered in such a country; or
d. An entity whose beneficial owner is situated in such a country; or
e. An Indian (or other) agent of such an entity; or
f. A natural person who is a citizen of such a country; or
g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.

I. The beneficial owner for the purpose of above clause will be as under:

(i) In case of a company or Limited Liability Partnership, the beneficial owner is the natural person (s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.

Explanation-

a. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five percent of shares or capital or profits of the company;
b. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders' agreements or voting agreements;

(ii) In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;

(iii) In case of an un-incorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;

(iv) Where no natural person is identified under (i) or (ii) or (iii) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;

(v) In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

An Agent is a person employed to do any act for another, or to represent another in dealings with third person.

IN CASES WHERE SUB CONTRACTING IS PROVIDED:

A certificate is required to be submitted/ uploaded by the Tenderer in respect on sub-contracting separately in the following format:
"I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. (Where applicable, evidence of valid registration by the Competent Authority shall be attached)."

1.5 CONTRACT PERIOD

The total contract period for Augmentation and Comprehensive Maintenance of Existing Automatic Meter Reading (AMR) system for HT installations in RAPDRP areas of BESCOM for five years.

Date of commencement is will be communicated by BESCOM to the successful bidder.

During the Contract period, successful bidder is responsible for

1. Replacement of existing HT modems: As specified in the scope of work.
2. Comprehensive maintenance of all existing, replaced and incremental modems.

All services shall be performed in accordance with the technical specifications, service level requirements.

Supply Period: One month from Date of Award.

Replacement and Commissioning Period: Six Months from the Date of commencement**.**

Maintenance Period: From date of Commencement.

1.6 BID SUBMISSION

Instructions regarding KPP portal:

1. The bid is to be quoted online through e-auction in the Government of Karnataka "Karnataka Public Procurement (KPP) portal" on **https://kppp.karnataka.gov.in only.**
2. Bidders, who have not registered in the KPP portal, may do so by registering through the above website. **A non-refundable Tender processing fee** as determined by the above said procurement platform shall be payable electronically by the Bidders at the time of submitting Bids.
3. The Bidders can access bid documents on the web site and participate in the e-Auction within the stipulated time and date as per auction notice details through above portal only.
4. Bidders shall attach scanned copies of all the certificates pertaining to the qualifying requirements as mentioned in the eligibility criteria and any other certificates as required in the tender, which are mandatory.
5. The Bidders shall furnish the original certificates for verification whenever required to the BESCOM authorities, failing which the Bidder will be disqualified.
6. Conditional bids, incomplete bids, bids without EMD, bids not properly uploaded, and bids submitted late will be rejected.
7. Date and timestamp of the portal shall be final in deciding the time and date of submission of bid through e-Auction. Decision of the Company in this regard is final and must be accepted by all the Bidders.
8. The Bidders shall quote in Indian Rupees only.

9. Bids shall be submitted through above portal only.
10. The Bidder shall upload documents to satisfy qualifying requirements, EMD, Declaration form, proof of address wherever necessary, pollution controls board authorization /certificate whenever required and other statutory requirements.
11. The EMD furnished by the Bidders will be forfeited in case the Bidder withdraws the offer during the validity or violates any clause stipulated in the bid.
12. The prospective Bidders shall upload all the relevant documents along with the bid.
13. The validity of the bid shall be 180 days from the last date of bid submission.
14. Corrigendum / Modification / Corrections, if any will be published in the KPP portal only.

Procedures

1. The Bids along with prescribed documents as per annexures shall be submitted through KPP portal and the Bidders are requested to familiarize themselves with the procedure of E-Procurement through KPP thoroughly before submission of Bids.
2. Mere issue/downloading of Bid Document does not qualify any Bidding firm for appointment. The Bidders who do not comply with the eligibility Criteria mentioned in the Tender Notification/Bid document will be rejected.
3. The submission of Bidders implies that they have read and understood the contents of Tender Notification and the Bid document.
4. The Authority reserves the right to accept/reject all or any of the Bids without assigning any reasons.
5. Conditional quotes/ Bids are not acceptable.
6. The declaration given by the Bidders is found false on verification, the offer of such Bidder will be discarded and not considered for evaluation and legal action will be initiated against such Bidder who has submitted the false declaration.

Sd/
General Manager (ICT& MIS)
BESCOM

Note: The above Notification is subject to changes from time to time. Prospective Bidders are requested to contact the authorized person / office indicated in the Notification for the authentic prevailing version. The Management does not take any responsibility for any consequences arising out of any acts or forbearance on the part of the third parties on the basis of the above Notification.

For any technical support regarding KPP portal please contact KPP help desk:

Help Desk: 080-46010000, 080-68948777
E-mail: **support@eprochelpdesk.com**.

2. Section II: INSTRUCTIONS TO BIDDERS

2.1. INSTRUCTION:

BESCOM on behalf of Bangalore Electricity Supply Company Limited, invites tenders vide Enquiry **BESCOM/2025-26/IND0186/CALL-2 dated 28.01.2026** in two parts (Technical Bid and Price Bid) through KPP portal https://kppp.karnataka.gov.in for "Augmentation and Comprehensive Maintenance of Existing Automatic Meter Reading (AMR) system for HT installations in RAPDRP areas of BESCOM for five years."

2.2. COST OF BIDDING:

The Bidder shall bear all costs and expenses associated with preparation and submission of its bid including post-bid discussions, Technical bid and other presentations etc., and BESCOM will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

2.3. UNDERSTANDING OF BID DOCUMENTS

A prospective Bidder is expected to examine all instructions, forms, terms and specifications in the Bid documents and fully inform himself so as to all the conditions and matters which may in any way affect the scope of work or the cost thereof. Failure to furnish all information required by the Bid document or submission of a Bid not substantially responsive to the Bid document in every respect will be at the Bidder's risk and may result in the rejection of its bid.

2.4. LANGUAGE OF BID

The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Purchaser, shall be written in English. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in English, in which case, for purposes of interpretation of the Bid, such translation shall govern.

2.5. CURRENCIES OF BID

Bidders may express their bid price in Indian Rupees only. Price Bid in any currency other than INR will be treated as non-responsive and hence will be rejected.

2.6. BID VALIDITY

Bids submitted by Bidders shall remain valid for acceptance for 180 calendar days from the last date of Bid submission. A Bid valid for a shorter period may be rejected by the Purchaser as being non-responsive.

In exceptional circumstances, the Purchaser may solicit the Tenderer's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing (or by cable or telex or fax). The earnest money deposit provided under Clause 2.7 shall also be suitably extended. A Tenderer may refuse the request without forfeiting its earnest money deposit. A Tenderer granting the request will not be required nor permitted to modify its tender.

2.7. EARNEST MONEY DEPOSIT (BID GUARANTEE)

Bidders shall pay Tender Processing Fee and EMD through online e-payment modes as provided in KPP portal.

2.7.1 The bid guarantee may be forfeited:

a) If a Bidder withdraws / modifies its bid during the period of bid validity specified by the Bidder on the Bid Form; or
b) In case of a successful Bidder fails to sign the Contract or furnish the Agreement within the prescribed date or
c) In case of a successful Bidder fails to furnish the bank guarantee.

2.7.2 E-payment modes for Tender Processing Fee

The bidder should pay the Tender Fee in the KPP portal using any of the following payment modes:

a) Credit Card
b) Direct Debit
c) National Electronic Fund Transfer (NEFT)
d) Over the Counter (OTC)

2.8. DEADLINE FOR SUBMISSION OF BIDS

Bids must be uploaded in the KPP portal on or before the date specified in **"Key Events and Dates"** section of the document or the KPP portal. BESCOM may, at its discretion, extend this deadline for the submission of bids by amending the Bidding Document, in which case all rights and obligations of Purchaser and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

2.9. MODIFICATION AND WITHDRAWAL OF BIDS

a) The Bidder may modify or withdraw its bid after the bid's submission provided that written notice of the modification or withdrawal is received by Purchaser prior to the deadline prescribed for submission of bids.
b) No bid may be modified subsequent to the deadline for submission of bids. No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the
c) Bid Form withdrawal/modification of a bid during this interval may result in the Bidder's forfeiture of its bid security.
d) In KPP Portal Bidder has the option of withdrawing the Bid by digitally signing to withdraw/cancel bid before the bid submission time /Date.

2.10. FORMAT OF BID

a) The bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder, in which case such corrections shall be initiated by the person or persons signing the bid.
b) All the documents in support of qualifying requirements and all necessary documents shall be scanned and uploaded in the KPP website.
c) (https://kppp.karnataka.gov.in).

2.11. CONTENTS OF TENDER DOCUMENT

The services required, bidding procedures, contract terms, etc. are prescribed in the Tender Document. Bidders are expected to examine all instructions, terms & conditions, specifications, annexures, forms and other information in the Tender Document. Failure to furnish any or all information as required or submit a Bid not substantially responsive to the Tender Document in every respect will be at the Bidder's risk and may result in rejection of the Bid.

2.12. BIDDER TO OBTAIN HIS OWN INFORMATION

The Bidder shall for all purposes deemed to have independently obtained all necessary information for the purpose of preparing his Bid. The correctness of the details given in the Tender Document is for guideline information only, to help the Bidder prepare his Bid. The cost of visiting the sites shall be borne by the Bidder. Non-familiarity with the site conditions will not be considered a reason either for extra claims or for not providing services in strict conformity with scope and special conditions of the contract.

2.13. CLARIFICATION ON TENDER DOCUMENT

If the prospective Bidder finds discrepancies or omissions, in specifications and document or is in doubt as to the true meaning of any part, he shall at once make a request, in writing, for an interpretation/clarification, to Purchaser.

The Purchaser, then, will issue interpretation(s) and clarification(s) as he may think fit in writing.

A prospective Bidder requiring any clarification on the RFP Document may submit his queries, in writing, at the mailing address and as per schedule indicated in "Invitation for Bids/ Key events and dates". The queries must be submitted in the following format only to be considered for clarification.

Sl. no.	**Section no./ Clause no.**	**Page no.**	**Description/ Reference/ Subject**	**Clarification Sought**
	..	..	..	..

The queries not adhering to the above mentioned format would not be responded. BESCOM will respond to any request for clarification to queries on the Tender Document, received not later than the dates prescribed in Invitation for Bids/ Key events and dates. The clarifications (including the query but without identifying the source of inquiry) will be uploaded on the Karnataka KPP portal (https://kppp.karnataka.gov.in) .

Responses will be uploaded by the Purchaser in the KPP portal to any request for such clarification of the Bidding Document. Verbal clarification and information given by Purchaser or his employee(s) or his representative(s) shall not in any way be binding on Purchaser.

2.14. AMENDMENT OF BIDDING DOCUMENT

At any time prior to the deadline for submission of the Bids, Purchaser may, for any reason, at its own initiative modify the Tender Document by issue of an addendum/corrigendum.

In addition, Purchaser may issue addendum/corrigendum to the Tender Document to make/reflect amendment(s) in terms & condition or Scope of Work specified in this Tender Document.

Any such addendum/corrigendum will be made available at the Karnataka KPP website. No separate other communication in this regard shall be made with any Bidder. It will be the responsibility of the Bidder to regularly visit the website to keep themselves updated on such changes.

No clarification obtained through verbal communication by the Bidders from any officer, agent or employee of the Purchaser or any staff of the BESCOM IT Consultant will be deemed as addendum/corrigendum to the Tender document.

2.15. GENERAL INSTRUCTION FOR BID PREPARATION

The Bidders are advised to submit their Bids complete in all respect. The Bidder shall submit a comprehensive list of attached forms/declarations/certificates etc. in response to Tender Document.

The Scope of Work specified in this Tender Document shall be executed strictly in accordance with the conditions specified in the RFP and other conditions specified in various sections of this Tender Document. If any of the aforesaid condition is not clear to a Bidder, clarification may be sought from the Purchaser as per the provisions of clause 2.13 (Clarification on Tender Document).

The Bidders must accept all the conditions specified in the Tender Document to facilitate early finalization of Bids. Separate set of commercial conditions (such as Bidder's standard printed conditions) enclosed with the offer and any reference there to may prevent the Bid from being considered by the Purchaser.

2.16. PREPARATION OF BID/PROPOSAL

a) Bidder shall submit one Bid. If, Bidder submits more than one Bid such Bids shall be disqualified.
b) The Bid/Proposal as well as all related correspondence exchanged by the Bidders and the Purchaser shall be written in English language, unless specified otherwise.
c) In preparing their Bid/Proposal, Bidders are expected to examine in detail the documents comprising the RFP. Material deficiencies in providing the information requested may result in rejection of a Bid/Proposal.
d) The Technical Bid/Proposal shall not include any financial information. A Technical Proposal containing financial information may be declared non responsive.

2.17. FINANCIAL BID/PROPOSALS

The Financial Proposal shall be directly entered in the KPP portal. It shall list all costs associated with the Assignment/Job, including the various deliverables costs and taxes. The financial proposal shall not include any conditions attached to it and any such conditional financial proposal shall be rejected summarily.

Bidders are to Enter/Key-In the bid price directly in the KPP portal of GoK, in the financial bid section. This is as per the GOK Circular: ಸುತ್ತೋಲೆ ಸಂಖ್ಯೆ: ಆಇ 165 ವೆಚ್ಚ-12/2017 dated 21/3/2017. As per the circular only the price entered/keyed-in the KPP portal is to be considered for bidding purpose and no document uploaded as financial bid is to be considered.

Bidders should not upload the Price bid form in the portal in technical or financial section (there is no provision for upload in financial section of KPP portal.). If bidder upload financial bid in the technical section such bids will be summarily disqualified.

a) The firm price should only be quoted.
b) The bidder must quote in Indian Rupees (in INR) only. Bids in currencies other than INR would not be considered and the bid will be rejected forthwith.
c) The prices offered shall be on a fixed price basis inclusive of GST and should not be linked to the foreign exchange or any other variable.
d) The prices offered should be inclusive of all the deliverables mentioned in Scope of work of section Special Conditions of Contract.

2.18. RIGHT OF PURCHASER TO ACCEPT OR REJECT

a) The Purchaser reserves the right to accept or reject any Bid, and to annul the bidding process and reject all Bids at any time Bids prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Purchaser's action.
b) The right to accept the Bids in response to this Tender Document will rest with the Purchaser. The Purchaser further does not bind himself to accept and reserves the authority to reject any or all the Bids received without assigning any reason whatsoever.

2.19. BID OPENING

a) The KPP system allows the Purchaser to download and open the e-submitted bid files from bidders only after the time for opening the bids. The technical bids will be opened as per dates given in the e-proc portal.
b) The price bids of all the qualified technical responsive bidders shall be opened after completion of successful Technical evaluation. The e-submitted bids must be readable through open standards interfaces. Unreadable and or partially submitted bid files shall be considered incomplete and rejected for further bid evaluation.

2.20. BID EVALUATION

The evaluation process of the tender, proposed to be adopted by the Purchaser is indicated under this clause.

Evaluation of Techno –commercial Bid

a) The Pre-Qualification Proposal will be evaluated and only those bidders who qualify the requirements will be considered for financial evaluation.
b) Documents and required forms uploaded by the bidders as part of the Pre-Qualification criteria will be opened and evaluated for compliance in this stage of evaluation.
c) Only those Bidders who meets all the pre- qualification criteria stated in this RFP, shall be considered for financial Evaluation of Bidder.
d) BESCOM will review the documents of the bidder. Evaluation shall be on the basis of technical specifications and documents provided by the Bidder.
e) Any deviation to the technical specification will be treated as disqualified.

Evaluation of Financial Bid.

a) The Financial Bids of techno-commercially qualified bidders will only be opened.
b) Only fixed price commercial bids indicating total price for the deliverables specified in this bid document will be considered.
c) Prices shall be quoted in Indian Rupees, inclusive of all statutory charges, duties and GST etc. both in figure and words rounded to one rupee.
d) Any conditional bid would be rejected.
e) No escalation of cost is allowed during the validity of the contract period.
f) Errors & Rectification: Arithmetical errors will be rectified on the following basis: "If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. If there is a discrepancy between words and figures, the lowest amount will be considered".
g) If there is no price quoted for the deliverables, the bid shall be declared as disqualified.
h) The Financial Bids would be evaluated based on the overall price quoted by the Bidder as in Price Bid form 6. The evaluation would be based on L1 criteria only. The Bidder who quotes the lowest price shall be considered as L1.

2.21. NEGOTIATIONS

It is absolutely essential for the bidders to quote the lowest price at the time of making the offer in their own interest. However, BESCOM reserves the right to negotiate price before awarding the contract.

2.22. AWARD CRITERIA

The Successful bidder will be issued Letter of Intent (LOI) by BESCOM.

Within 15 days of issue of LOI, the bidder should comply with the following requirements:

1. Submit duly signed acceptance letter to LOI.
2. Submit Performance Bank Guarantee for 5% of Contract Value.
3. Contract agreement along with SLA on appropriate value non judicial stamp paper (BESCOM will issue draft contract agreement to bidder).
4. Non-Disclosure Agreement (NDA) (BESCOM will issue draft SLA agreement to bidder).

Once all the above documents are submitted, a Detailed Work Award (DWA) will be issued by BESCOM.

2.23. NO COMMITMENT TO ACCEPT LOWEST OR ANY TENDER

BESCOM shall be under no obligation to accept the lowest or any other offer received in response to this tender notice and shall be entitled to reject any or all offers including those received late or incomplete offers without assigning any reason whatsoever. BESCOM will not be obliged to meet and have discussions with any bids, any or to listen to any representations.

2.24. RIGHT TO ACCEPT/REJECT ANY OR ALL BIDS

Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for Purchaser's action.

2.25. NOTIFICATION OF AWARD

Prior to the expiration of the period of bid validity and extended validity period, if any, Purchaser will notify the successful Bidder in writing by registered letter or fax/email, that its bid has been accepted.

3. Section III: GENERAL CONDITIONS OF CONTRACT (GCC)

3.1. BID PRICES

3.1.1. Otherwise specified in the Scope of Work, Bidders shall quote for the entire Services on a Single Responsibility/ Turnkey basis such that the total Bid price covers all the obligations of the Bidder mentioned in or to be reasonably inferred from the Tender Document in respect of providing the product/services wise.

3.1.2. Bidders are required to quote the price for the required items as per Scope of Work specified in RFP.

3.1.3. Shall give the prices in the manner and detail as asked for in the Price Bid given in price bid form failing which the Purchaser shall reserve the right to assume/extrapolate the prices for the item/services for which the price has not been quoted and the same will be binding on the Bidders. Responsibility for including all applicable taxes, duties and levies in the Bid lie with the Bidder and the Purchaser shall not be responsible for any error/omission on the part of the Bidder.

The Goods and Services Tax (GST) shall be indicated by the Bidder in the Price Bid given in Form 6 of section 8 and shall be quoted as the rates in force as on seven (7) calendar days prior to the last date of Bid submission as mentioned in event sheet. The total price quoted by the bidder should be inclusive of GST.

The price shall be inclusive of GST. BESCOM will not pay any other taxes, whatsoever in respect of this contract. Any increase in the tax should be absorbed by the firm during the contract and any reduction in the tax should be passed on the BESCOM.

3.2. PERFORMANCE GUARANTEE

The successful bidder shall furnish the performance guarantee in the form of bank guarantee issued by a public sector nationalised bank/scheduled commercial banks in India, payable at Bengaluru equal to 5% (Five) of Total Contract Value and valid up to 90 days after the end of contract period. Performa as per form 5 of section 8 in the RFP shall be followed.

3.3. LIQUIDATED DAMAGES

a If the Supplier fails to deliver any or all of the Goods or perform the related services within the period specified period in the contract, the Purchaser may without prejudice to all its other remedies under the contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to 0.5% of the value of the Goods or Related Services, supplied beyond stipulated delivery schedule for each week or part thereof of delay until actual delivery or performance, subject to a maximum of 10% of value of such goods and services.

b If the Goods and Related Services supplied do not meet the minimum specifications as per the Contract, and the same is not replaced/modified by the Supplier to meet the requirements within 14 days of being informed by the Purchaser, the Purchaser shall be free to impose any penalty as deemed fit.

c In Purchase, the Purchaser shall reserve the right to terminate the contract and recover liquidated damages by forfeiting the performance guarantee submitted by the Purchaser.

3.4. PAYMENT CLAUSE

PART A – SUPPLY, INSTALLATION, COMMISSIONING OF MODEMS.

Sl No	Scope of Work	Payment terms	Deliverables
1	Supply of 4G Enabled Modems, Cables and accessories for connecting the meters for Data Collection and transmission infrastructure/device.	**50%** of the cost quoted towards Supply, Installation, Commissioning of Modems. (0ne month from Date of award)	• Delivery of Modems to BESCOM stores. • Submission of delivery challans and material inspection reports.
2	Installation (Replacement), Commissioning of Modems i.e. supply and configuration of SIM card, Integration to MDAS server and pushing data to MDM server.	**20%** of the cost quoted on completion of 50% of the tendered quantity of Modem Supply, Installation(replacement), Commissioning.(After 3 months of Date of commencement) **20%** of the cost quoted on completion of remaining 50% of the tendered quantity of Modem Supply, Installation(replacement), Commissioning.(After 6 months of Date of commencement)	a. Modem Configuration details. • SIM number • Meter serial number • Modem Serial Number • Modem to meter serial number mapping. b. The installed and commissioned modem serial number will be verified in MDAS communication status. c. On completion of the training as per clause 5.3.6.

3	Retention clause	**10%** of the cost quoted towards Supply, Installation, Commissioning of Modems. 6 months after successful completion of Installation (Replacement), Commissioning of Modems.	Completion certificate by the tender inviting authority.

PART B – MAINTENANCE CHARGE

Sl No	Scope of Work	Payment terms	Deliverables
1	Maintenance Charges = MDAS Charges, Data Charges, Connectivity Charges, Modem Troubleshooting (fault resolution)	100% will be paid on quarterly basis for **60 months** (Contract Period)	• Modem uptime reports • Fault reports and resolution logs with segregation of UTILITY issue or AMR issue. • Communication status in MDAS portal.

3.5. TERMS OF PAYMENT

A. Supply of 4G Enabled Modems, Cables and accessories for connecting the meters for Data Collection and transmission infrastructure/device.

Upon delivery of the invoices payment shall be arranged by ICT&MIS Section subject to the following:

i. Submission of deliverables
ii. The successful bidder/agency shall submit pre-receipted bill in duplicate with the certification of invoice from Manager, AGM, DGM and General Manager (ICT&MIS) Section, BESCOM.

B. Installation(replacement), Commissioning of Modems i.e. supply and configuration of SIM card, Integration to MDAS server and pushing data to MDM server.

Upon delivery of the invoices payment shall be arranged by ICT&MIS Section subject to the following:

i. Submission of deliverables

ii. The successful bidder/agency shall submit pre-receipted bill in duplicate with the certification of invoice from Manager, AGM, DGM and General Manager (ICT&MIS) Section, BESCOM.

C. <u>Maintenance Charges</u>

Upon delivery of the monthly invoices submitted quarterly payment shall be arranged by ICT&MIS Section subject to the following:

i. Submission of deliverables
ii. As per the Town wise, SDO wise communication status in MDAS portal.
iii. Verification and applicable penalty as per the Penalty clause.
iv. The successful bidder/agency shall submit pre-receipted bill in duplicate with the certification of invoice from Manager, AGM, DGM and General Manager (ICT&MIS) Section, BESCOM.

3.6. PENALTY

The MDAS application should be available (>99%) based on which the following penalty will be applied in case of non-performance/non-communication of modems.

SI. No	Description	% of communication	Extent of Payment	Extent of Penalty
1	**Extent/Percentage of HT Meter information received on system (monthly)**	90%-100% of total HT installations	No payment towards non-communicating installations	No Penalty
		80%-89% of total HT installations	No payment towards non-communicating installations	10% penalty on unit rate of Maintenance Charges on total number of non-communicating installations
		75%-79% of total HT installations	No payment towards non-communicating installations	15% penalty on unit rate of Maintenance Charges on total number of non-communicating installations

		Less than 75% of total HT installations	No Payment	No payment of Maintenance Charges

1. The above 'percentage of communication' shall be calculated for each Sub-Division.
   a. One of the main objective of HT AMR is remotely billing HT installations on 1st of every month. Hence, for all reasons, if the installation has communicated even for the entire month and has not communicated on 1st of the month, the installation shall be considered as 'non-communicating' even though the installation has communicated for rest of the month.
   b. The percentage of communication for purpose of arriving at penalty clause will be calculated using below:
   Percentage = (Communication count + Utility issue)/ Total HT installations in SDO.
2. In case of no communication/network available, the successful bidder may also acquire meter data through CMRI. The minimum automatic data inflow requirement for no penalty is 90%. Therefore, successful bidder can acquire data of maximum 10% of total number of installations per SDO only through CMRI for the purpose of payment.
   a. The meter data from CMRI shall be pushed to MDM before billing cycle.
   b. A report for the same shall be generated in MDAS.
3. Penalty shall be levied immediately from the award date as the existing modems are communicating intermittently. During the FIRST SIX MONTHS the successful bidder should complete:
   a. The replacement of all old modems list shared to the successful bidder along with award and should complete troubleshooting activities of all the non-communicating existing HT installations and submit the status report to IT section from the date of award. The non-communicating installation details shall be shared during award.
   b. The total penalty will be capped at 10% of the monthly invoice submitted quarterly.

3.7. TERMINATION OF CONTRACT

a) Termination on Non-performance: If the average meter read provided by the successful bidder is less than 75% of the total number of modems for three consecutive months, then the contract may be terminated.

b) Termination for failed delivery/incomplete services:

c) In case the service provider fails to complete the work within the contracted period or if found to have furnished misleading or false representations in statements and attachments submitted as proof of the qualifying requirement at a later date the Company shall exercise its discretionary powers on any or all the following:

i. To recover from the service provider/supplier, as agreed, liquidated damages or by way of penalty, the amount as per penalty clause above; and
ii. To avail the services elsewhere, after giving due notice to the service provider/supplier on account and at the risk of the Service provider/supplier
iii. To cancel the Contract order to forfeit the bank guarantee, if it has been submitted
iv. To black list or not to consider future offers for a specified period.

In the event the Purchaser terminates the Contract in whole or in part, pursuant to, the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Related Services similar to those undelivered or not performed, and vendor/bidder shall be liable to the Purchaser for any broad costs for such similar Goods or Related Services.

3.8 TERMINATION FOR INSOLVENCY

The Purchaser may at any time terminate the Contract by giving written notice to the Supplier, if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Purchaser.

3.9 TERMINATION FOR CONVENIENCE

a) The Purchaser, by written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.

b) The Goods that are complete and ready for shipment within 30 days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:

a. To have any portion completed and delivered at the Contract terms and prices; and/or
b. To cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and for materials and parts previously procured by the Supplier.

3.10 LIMITATION OF LIABILITY

The bidder's aggregate liability in connection with obligations undertaken as a part of this Project whether arising under this project regardless of the form or nature of the action giving rise to such liability (whether in contract, or otherwise), shall be limited

to the contract value provided, however this limitation shall not apply to any liability for damages arising from

a. wilful misconduct or
b. indemnification against third part claim for infringement or
c. tortuous liability arising out of misconduct or negligence or
d. Death.

BESCOM shall not be liable to the bidder in case of any loss or profits or additional costs incurred etc. subsequent to termination of contract.

3.11 FORCE MAJEURE

a) Force Majeure means any event or circumstance or combination of events and circumstances including those stated below that wholly or partly prevents or unavoidably delays the BESCOM or the supplier in the performance of their obligation under this Contract, but only if and to the extent that such events or circumstances are not within the reasonable control, directly or indirectly, of the affected Party and could not have been avoided if the affected Party had taken reasonable care or complied with prudent utility practices.

a. Act of God, including, but not limited to lightning, drought, fire and explosion (to the extent originating from a source external to the Site), earthquake, volcanic eruption, landslide, flood, cyclone, typhoon, tornado, war embargo, or exceptionally adverse weather conditions which are in excess of the statistical measures for the last hundred (100) years, or
b. Any act of war (whether declared or undeclared), invasion, armed conflict or act of foreign enemy, blockade, embargo, or
c. Any event or circumstance of a nature analogous to any of the above.

Delay or non-performance by either Party here to cause by the occurrence of any event of Force Majeure shall not

i. Constitute a default or breach of the Contract, or
ii. Give rise to any claim for damages or additional cost or expense occasioned thereby.
iii. If and to the extent that such delay or non-performance is caused by the occurrence of an event of Force Majeure.

b) The bidder or BESCOM shall not be liable for delay in performing his obligations resulting from any Force Majeure cause as referred above.

c) If either Party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances there of within fifteen (15) calendar days after the occurrence of such event.

d) The Party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such Party's performance is prevented, hindered or delayed. The Time for Completion shall be extended in accordance with clauses of RFP.

e) The Party or Parties affected by the event of Force Majeure shall use reasonable efforts to mitigate the effect there of upon its or their performance of the Contract and to fulfil its or their obligations under the Contract, but without prejudice to either Party's right to proceed as per the provisions under clauses of RFP.

f) If the performance of the Contract is substantially prevented, hindered or delayed on account of one or more events of Force Majeure during the currency of the Contract, the Parties will attempt to develop a mutually satisfactory solution, failing which the dispute shall be resolved in accordance with clauses of RFP.

3.12 SETTLEMENT OF DISPUTES

a. Mutual consultation: If any dispute or difference of any kind whatsoever shall arise between the BESCOM and the successful bidder in connection with or arising out of the Contract including without prejudice to the generality of the foregoing, any question regarding its existence, validity or termination, or the execution of the Project - whether during the progress of the Project or after their completion and Whether before or after the termination, abandonment or breach of the Contract – the parties shall seek to resolve any such dispute or difference by mutual consultation. In the first instance, the reference of any such dispute/difference shall be made to the GM (ICT&MIS)-BESCOM. If the parties fail to resolve such a dispute or difference by mutual consultation, then the dispute shall be referred in writing by either Party to the Adjudicator, with a copy to the other Party.

b. Adjudication: The Adjudicator shall give its decision in writing to both parties within thirty (30) calendar days of a dispute being referred to it. If the Adjudicator has done so, and no notice of intention to commence arbitration has been given by either the BESCOM or the bidder within sixty (60) calendar days of such reference, the decision shall become final and binding upon the BESCOM and the bidder. Any decision that has become final and binding shall be implemented by the parties forthwith.

   Should the Adjudicator resign or die, or should the BESCOM and the bidder agree that the Adjudicator is not fulfilling its functions in accordance with the provisions of the Contract; another Adjudicator shall be jointly appointed by the BESCOM and the bidder as Adjudicator under the Contract. Failing agreement between the two within thirty (30) calendar days, the Adjudicator shall be appointed under the Contract on the request of either Party by the Appointing Authority. The Adjudicator shall be paid fee plus reasonable expenditures incurred in the execution

of his duties as Adjudicator under the Contract. These costs shall be divided equally between the BESCOM and the bidder.

c. Arbitration

I. All disputes or differences in respect of which the decision, if any, of the Project Manager and/or the Head of the Implementing Authority has not become final or binding as aforesaid shall be settled by arbitration in the manner provided herein below:

II. The arbitration shall be conducted by three arbitrators, one each to be nominated by the Successful bidder and the Employer and the third to be appointed by both the arbitrators in accordance with the Indian Arbitration Act. If either of the parties fails to appoint its arbitrator within sixty (60) days after receipt of a notice from the other party invoking the Arbitration clause, the arbitrator appointed by the party invoking the arbitration clause shall become the sole arbitrator to conduct the arbitration.

III. The language of the arbitration proceedings and that of the documents and communications between the parties shall be English. The arbitration shall be conducted in accordance with the provisions of the Indian Arbitration and Conciliation Act, 1996 or any statutory modification thereof. The venue of arbitration shall be Bangalore.

IV. The decision of the majority of the arbitrators shall be final and binding upon the parties. In the event of any of the aforesaid arbitrators dying, neglecting, resigning or being unable to act for any reason, it will be lawful for the party concerned to nominate another arbitrator in place of the outgoing arbitrator.

V. During settlement of disputes and arbitration proceedings, both parties shall be obliged to carry out their respective obligations under the Contract

3.13 RISK PURCHASE CLAUSE

In the event successful bidder fails to execute the project as stipulated in the delivery schedule, or to the satisfaction of Authority. Authority reserves the right to procure similar services from the next eligible bidder or from other alternate sources at the risk, cost and responsibility of the Bidder. Before taking such a decision, Authority shall serve a notice period of 3 days to the successful bidder. Total Liability of the successful bidder towards this Clause is limited to 100% of the contract value.

4. Section IV: SPECIAL CONDITIONS OF CONTRACT

The following Special Conditions of Contract (SCC) shall supplement the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

4.1	The Purchaser's country is: The Union Of India
4.2	The Purchaser is: Bangalore Electricity Supply Company Ltd.
4.3	The web-site is https://kppp.karnataka.gov.in The details regarding the RFP (Bid) process shall be available on the same. The eligible bidders should visit the website from time to time and get the status updates. All details uploaded on the website from time to time shall be deemed to have been provided to all the bidders.
4.4	The language shall be: English
4.5	For notices, the contact details shall be: THE GENERAL MANAGER (ICT&MIS) BANGALORE ELECTRICITY SUPPLY COMPANY LTD. BELAKU BHAVANA, CORPORATE OFFICE, K R CRICLE, BANGALORE -560001, KARNATAKA Email: gmit@bescom.co.in Contact: 080-22261911
4.6	The governing law shall be: Laws applicable in exclusive jurisdiction of the High Court of Judicature at **Bangalore**, India and all courts subordinate to its exclusive Jurisdiction.

4.7	The formal mechanism for the resolution of disputes shall be: If the parties fail to resolve such a dispute or difference by mutual consultation within twenty-eight (28) days from the commencement of such dispute and difference, either party may require that the dispute be referred for resolution to the formal mechanisms, described below (The date of commencement of the dispute shall be taken from the date when this clause reference is quoted by either party in a formal communication clearly mentioning existence of dispute or as mutually agreed): a. The mechanism for resolution of disputes for bidders shall be in accordance with the Indian Arbitration and Conciliation Act of 1996. The Arbitral Tribunal shall consist of 3 (Three) Arbitrators. Each Party shall nominate an Arbitrator and the two nominated Arbitrators shall mutually agree and nominate a third Presiding Arbitrator. b. The place for arbitration shall be **Bangalore, Karnataka**
4.8	The price adjustment shall be: The bidders may please note that the prices are upward/downward Adjustable. Purchaser reserves the right to review and negotiate the charges payable at any time to incorporate downward revisions as applicable and necessary, including due to lowering of any applicable taxes, duties and any other statutory levies. Prices shall not be subject to any upward/downward revision on any account whatsoever throughout the period of contract. Provided that any revision in taxes, statutory levies, duties which is not occasioned due to any change in place, method and time of supply or non-performance / non-fulfilment of any condition of any exemption considered by the bidder at the time of proposal, shall be considered for price adjustments.
4.9	**<u>General terms and conditions of Payment Schedule</u>** 1) All payments shall be made centrally at IT section of BESCOM in favour of the Bidder 2) The release of payments will be Performance (output) based, where the payments are made for measured deliverables and outputs majorly defined below. The SLAs will govern the penalty and deductions from payments for inferior deliverables.

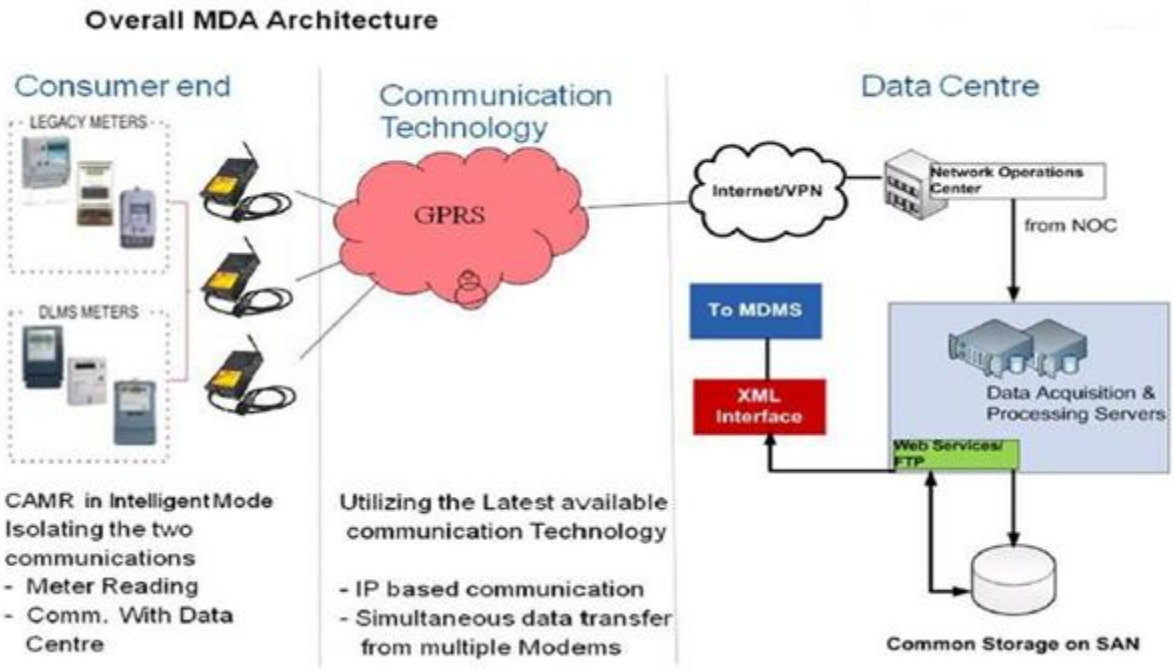
	3) Bidder needs to ensure completion of all works before submitting the invoice and approved only after the particular activity is completed. In case even part of the work is pending payment for that activity shall not be made. 4) The detailed terms of payment are as per tender documents 5) Cost has to be mentioned as per prescribed formats only. 6) Power to withhold: Notwithstanding anything contained in the payment schedule mentioned below, if in the opinion of the Purchaser, any work done or service rendered by bidder is deficient in any manner in comparison to the prescribed standards, Purchaser shall be at liberty to withhold a reasonable portion of the payments due to the bidder, till such work/ service is made confirming to the prescribed standards. These powers to withhold payments shall be without prejudice to any other power/ right of the Purchaser under this contract.
4.10	The currencies for payments shall be in Indian Rupees (INR).
4.11	The Performance Security paid, shall be in the form of Bank Guarantee issued by a Scheduled Indian Bank as notified by Reserve Bank of India. The Bidder shall submit Performance Guarantee of 5% on the Total Contract value to be valid for 90 days beyond the completion of contract period

5. Section V: SCOPE OF WORK

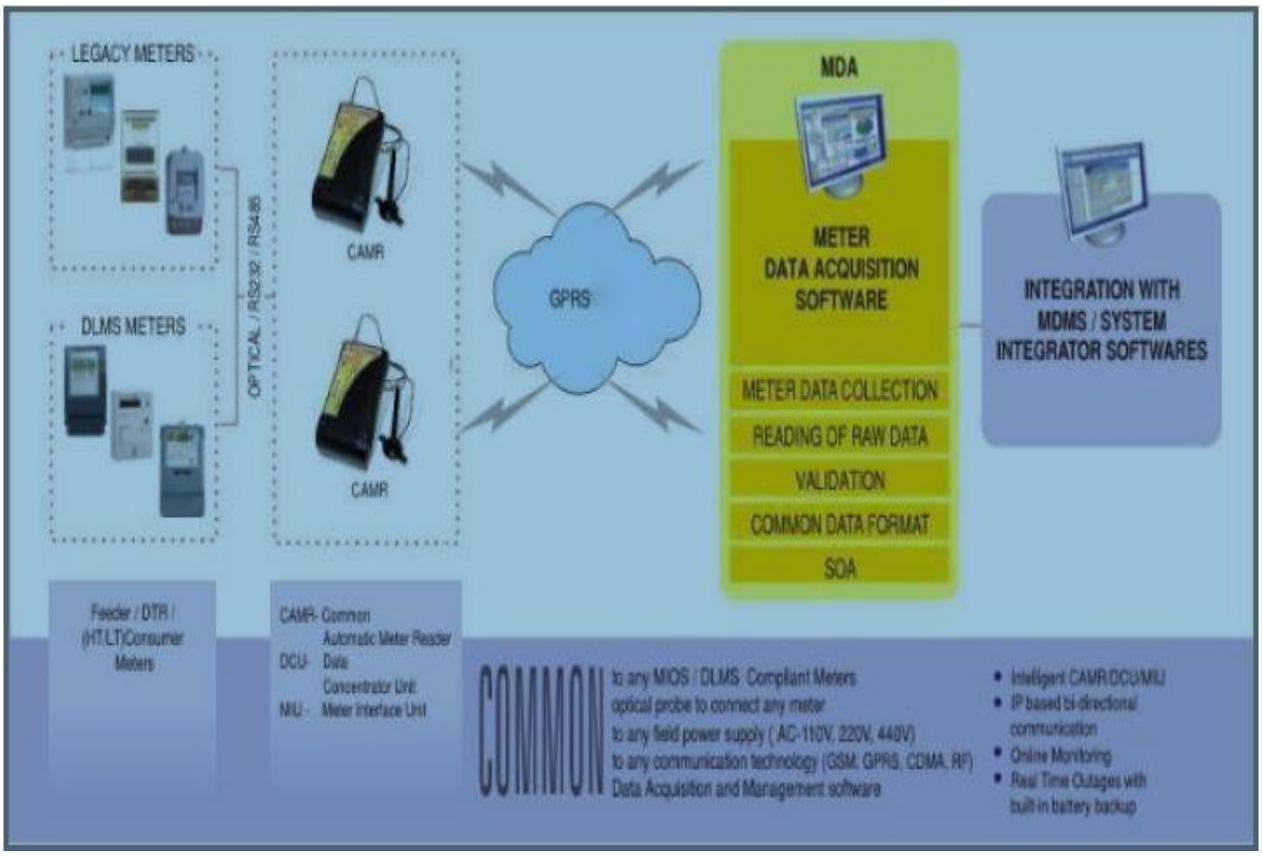
5.1 BACKGROUND

Existing AMR system in BESCOM

MDA system acquires meter raw data from various kinds of meters installed in the field through the Modems (CAMR), process the data, validate and convert the data into CDF format (XML) and stores it and transmit to MDMS (Meter Data Management System) for further analysis and reporting. Raw files received from different types of meters are processed through the respective API utility tools and converted into XML file. Meter data received from CAMR are in text format which is converted into XML file and to the MDMS system through built in web services architecture following the industry standards of web communication.



MDA Logical Data Access Architecture:



Salient features

- Supports GPRS Technology
- Supports MIOS compliant / Modbus / IEC 62056-21/ DLMS Meters. IP (internet protocol) based Communication, enabling simultaneous data access from hundreds / thousands of CAMRs.
- Secure and reliable data transfer through VPN.
- Capturing Real-time Tamper Alerts/ Event notifications SMS Alerts to field Mobile phones as per configuration.
- On line monitoring of vital Instantaneous parameters like voltages, currents energies, powers, power factors, Tamper events, Power quality etc.
- Two way communications facilitating monitoring, control and administration. Configured in push mode while it also supports On-demand data retrieval
- Intelligence in communication, in case of any communication break during data transfer Leftover data is sent in the next cycle.
- Common Data Acquisition & Management Software at Server end, for any meter and for any communication technology

5.2 CURRENT STATUS:

5.2.1 Modems:

GPRS Modems are installed to all the HT installations which are in intelligent mode and are integrated to MDAS.

5.2.2 MDAS: The existing MDAS is integrated with the Meter Data Management application under RAPDRP. The successful bidder shall integrate the incremental meter data to this MDM and any other MDM as specified by BESCOM in future. The MDAS should push instantaneous data at every 1-hour interval and complete data once per day. The server is hosted at BESCOM's Own Data Centre at below address.

BESCOM Data Center Address:
Ground Floor, BICC (BESCOM Integrated Control Center),
Parangi Palaya, Sector 2, HSR Layout
Bengaluru – 560102

5.2.3 SIMs:

M2M SIMs are installed to all configured HT installations.

5.2.4 MPLS link:

The above SIMs communicate to MDAS application hosted at Data Centre and Disaster Recovery Centre via MPLS links provisioned at each location.

List of RAPDRP Towns across BESCOM

Sl.no	Town	Sl.no	Town	Sl.no	Town
1	Anekal	10	Doddaballapura	19	Kunigal
2	Bangalore	11	Gowribidnur	20	Mulbagilu
3	Bangarpete	12	Harappanahalli	21	Ramanagara
4	Challakere	13	Harihara	22	Shidlagatta
5	Channapattana	14	Hiriyur	23	Shira Town
6	Chikkaballapura	15	Hosakote	24	Tiptur
7	Chintamani	16	K.G.F	25	Tumkur
8	Chithradurga	17	Kanakapura		
9	Davanagere	18	Kolar		

5.3 DETAILED SCOPE OF WORK:

5.3.1 Survey (The bidder shall submit compliance post survey):

A. Physical Site & Metering Point Survey

a) Signal strength measurement for all network operators. Accordingly use respective carrier SIMs.
b) Identification of the most suitable network (4G/LTE & 2G/3G is non 4G areas depending on availability).
c) Testing data session stability.
d) Identifying best positions for antenna mounting.
e) Antenna orientation feasibility (whip, external, directional).
f) SIM slot or APN feasibility based on field results.
g) Identification of sites requiring high-gain antennas or repeaters.

B. **Communication Feasibility Survey**

a) Identification and verification of HT consumer premises, meter rooms, and equipment locations.
b) Capturing GPS coordinates of all metering points.
c) Assessing physical accessibility, safety conditions, and enclosure readiness.
d) Recording meter make, model, serial number, CT/PT details, wiring configuration.
e) Checking existing modem installations (if any) and their conditions.
f) Photographing meter board, CT/PT chamber, modem placement area.

5.3.2 Phase-wise replacement of existing GPRS modems with 4G modems:

A. Business Continuity: The contractor shall plan and execute the migration in a manner that ensures continuity of meter data acquisition, the communication success rate. The billing-read percentage during the migration period shall remain at least equivalent to the levels recorded under the existing AMR system.
B. Compatibility: The proposed solution must be fully compatible with the existing Billing interfaces and MDMS interfaces, without requiring changes to existing data formats or integration APIs.
C. Seamless Integration: Integration of the new AMR system with the existing MDMS and billing system must be carried out without downtime to existing services.
D. Migration plan: The contractor shall submit a detailed migration and cutover plan demonstrating how existing data flows will be maintained in real time during the transition.
E. Meter Data Continuity: During the replacement of GPRS modems with 4G modems, all meter data—including load survey, instantaneous parameters,

events, and tamper information—must be preserved without loss. The bidder shall ensure complete continuity of meter data during device migration activities.

F. Integration with MDAS and successful communication: The modems should be integrated with MDAS showcasing successful communication and MDAS should be integrated with MDM where-in MDM should consume the data from MDAS.

G. The successful bidder shall replace all the 11,700 modems which include temporary installations in phased manner, WITHOUT affecting the existing communication status. i.e. The bidder should maintain the current communication levels as it is and take up replacement activity in below phases.
    a. Replacement of Non-communicating modems.
    b. Replacement of all decade old modems.
    c. Replacement of the rest of the modems.

5.3.3 SIMs and Connectivity:

- Till all the existing GPRS modems are replaced with 4G modems, the existing network setup shall be maintained.
- No dependency on any single telecom service provider.
- Public APN whitelisted SIMs with security.

5.3.4 MDAS (Meter Data Acquisition System):

The bidder shall design a scalable, secure, and high-performance MDAS platform including:

- End-to-end system architecture (modem–meter–MDAS–MDMS flow).
- Integration with all existing and future HT meter makes.
- Configurable communication engine supporting 4G and GPRS in non 4G areas.
- Redundancy in communication, servers, and storage.
- Secure data collection with encryption
- Disaster recovery architecture
- Scalable design to accommodate future meter additions

5.3.5 Comprehensive Maintenance of Existing, Replaced and incremental modems:

The list of existing modems of HT installations under RAPDRP towns for comprehensive maintenance shall be furnished to the Successful bidder during award.

A. The vendor shall provide end-to-end maintenance services for all HT AMR modems installed across the utility's network, ensuring maximum availability, accurate data acquisition, and uninterrupted communication between HT meters and the central MDAS/MDM system.

B. This includes preventive, corrective, and predictive maintenance, along with communication performance monitoring, firmware updates, SIM/Network management, field visits, and replacement of defective hardware
C. List of newly commissioned HT installations will be shared to the Successful bidder on monthly basis through-out the contract period. Modems for these will be provisioned by consumer/BESCOM.
D. Successful bidder shall supply and install whitelisted SIMs for modem communication for all HT installations.
E. During the installation of SIMs, it is the responsibility of the Successful bidder to reset/troubleshoot the modem to make sure that the modem is communicating meter data to the MDAS. If the modem is not communicating, the Successful bidder shall rectify/replace the modem. And configure the modems in the MDAS systems.
F. The scope of work shall comprise, but not limited to the design, engineering, manufacture, testing and inspection at manufacture's works, packing, supply, transportation, transit insurance, delivery to site, unloading, and storage and equipment erection including associated civil and structural works.
G. The modems shall communicate and fetch the data as per the BESCOM's requirement from meter and push the data to the MDAS (both Data Centre (DC) and Disaster Recovery data centre (DR)) servers on switch over. The prescribed format of which will be shared by BESCOM to the successful bidder.
H. The server hardware (in high availability mode) for hosting the head-end system (HES) also referred as MDAS shall be provisioned. The MDAS shall be hosted in DC provisioned by BESCOM and also hosted in DR on cloud platform.
I. The OS (Operating System), MDAS software (upgraded to latest version), database and any other application software's licenses shall be in the name of the BESCOM and shall be valid and guaranteed for 5 years extendable up to 2 years with support.
J. The application, database and any other sizing requirements shall meet the 5-year growth requirements (1.7% year on year on the contract quantity) of BESCOM
K. **Reports:** Monthly reports of newly configured modems, replaced modems, installed SIMs, troubleshooted details shall be submitted to IT section, Corporate Office in the prescribed format. A report of Installations-wise daily communication status for every month shall be provisioned in the MDAS application.
L. **Integration:** Successful bidder has to integrate modems to MDAS hosted at Data Center (Bengaluru) and new DRC hosted at Cloud (details of both shall be shared to Successful bidder) and integrated with new IPDS MDM solution seamlessly along with data migration.

M. Operate & Maintain Modems, cables, connectors, modem casing or any other system required at HT installations in the RADPRP area of BESCOM for successful automated meter data and transmit the same to the central MDAS server of BESCOM.
N. Operate & maintain the required network connectivity at slave location and suitable connectivity at central server level.
O. Acquisition of Meter data through Common Meter Reading Instrument (CMRI) in case of no communication available, as per the limit defined in the bid documents.
P. Provide required manpower for operation, maintenance & updating of system implemented.
Q. The bidder may tie up with more than one network providers as per requirement of specific locations, so that data transfer should not suffer on account of unavailability/ poor availability of network connectivity of a particular service provider.
R. In case of availability of better network communication medium in future, the proposed SIM services may be terminated/modified and suitable formula would be devised for deduction in payments of vendor against transfer of monthly data from SIM.
S. In case of requirement Cyber Security Audit for carrying out the assignment under the Package, the same shall be in the scope of selected Agency which needs to be necessarily carried out by an Indian Computer Emergency Response Team (CERTin) empanelled security auditor.
T. Returning old modems to BESCOM stores: the released old modems shall be returned to BESCOM stores as per BESCOM norms.

5.3.6 Training:

All costs associated with end-user training, administrator training, training materials, venue arrangements, logistics, trainer fees, travel, handholding support, and any other expenditure related to knowledge transfer shall be fully borne by the Successful Bidder.

A. <u>End-User Training for BESCOM Officers:</u>

The Successful Bidder shall provide detailed and structured training sessions to BESCOM officers covering the **operation, usage, monitoring, and troubleshooting** of the overall system. The training shall enable officers to independently operate the system on a day-to-day basis.

This includes, but is not limited to:

- Overview of MDAS architecture and communication flow
- Understanding modem–meter–MDAS interactions
- Dashboard navigation and interpretation of metering data
- Viewing, downloading, and interpreting energy parameters (kWh, kVAh, MD, PF, TOD, load survey, event logs etc.)
- Reading communication health indicators (RSSI, last communication time, data gaps, alerts)
- Generating daily, weekly, monthly reports
- Understanding alarms, notifications, and exception handling
- Basic troubleshooting steps for data not received, SIM/network issues, meter not responding, etc.
- Escalation procedures and support channels

The training shall include real-time demonstrations on the live system with practical examples.

B. Administrator Training

The Successful Bidder shall impart comprehensive administrative-level training to BESCOM personnel who will be responsible for managing the system after project completion. The training shall be for minimum of 3 days.

This includes complete knowledge transfer of Frontend Administration, Backend Operations and Database-Level Training.

5.3.7 Handing-over of Assets:

In case of termination of contract or on completion of contract period, following is to be handed over to designated agencies at zero cost:

a. Complete documentation for the entire system is handed over to Purchaser/identified agency.
b. Handover all AMC support related documents, credentials etc. for all OEM products supplied/maintained in this project
c. Ensure that no end of support products (software/hardware) is existing at time of transition during the course of implementation
d. Handover the list of complete inventory of all assets created for the project.
e. Assist the new agency/Purchaser in complete audit of the system including system licenses and physical assets

f. Give detailed walk-through and demos for the solution
g. Hand-over the entire software including program files, configuration files, setup files, project documentation, etc.
h. Provide shadow support for at least three months and secondary support for further three months after the end of O&M period or termination of contract, as applicable at no additional cost to BESCOM.
i. Close all critical open issues as on date of exit. All other open issues as on date of Exit shall be listed and to be provided to the Purchaser.

Note: Any cost towards the additional hardware and software required for successful end to end implementation has to be provisioned by bidder at no additional cost to BESCOM.

6. Section VI: TECHNICAL SPECIFICATION

6.1 OBJECTIVE

"Augmentation and Comprehensive Maintenance of Existing Automatic Meter Reading (AMR) system for HT installations in RAPDRP areas of BESCOM for five years."

1. Data acquisition from all types & makes of HT meters by using RS-232/RS-485, optical port. The modem should also be compatible to legacy meters(non-DLMS)/DLMS of certain specifications in the field which are communicable. Integration of the meter data with RAPDRP/IPDS system as specified by the owner.
2. MDAS hosting services along with Software for management of meter data like Instantaneous parameters, Load survey, Tamper Data, TOD energy, Billing parameters, Customized reports as per user requirement etc., with BESCOM with adequate bandwidth as per utility requirement with adequate licenses for viewing data.
3. The vendor should provide complete application access/ visibility through internet with necessary security.
4. The vendor shall be solely responsible for retrieving the data from meter to modem and pushing the received data to their own MDAS server and integrating with existing MDM under RAPDRP and MDM being implemented under IPDS IT Phase II.
5. The vendor shall also make necessary agreement with service provider to ensure smooth flow of data with 100% communication from **modem to Head End System (HES).**

6.2 TECHNICAL SPECIFICATION OF MODEM WITH BUILT IN BLUETOOTH:

All additionally supplied MODEMs shall be an intelligent device to be connected to an Electronic Energy Meter by means of optical port, RS-232/RS-485 port, and shall be installed to HT installations for uninterrupted collection of the following data as per configured frequency/On demand. These modems shall support communication in 4G and should support fall back mechanism to 3G/2G. The modem shall have built in Bluetooth module to read meter from mobile phone with meter reading mobile app, when there is a network issue or when manual reading is needed locally.

Complete Meter data stored in the meter. (Hourly/ daily/ weekly/ monthly)

a. Instantaneous parameters, at the time of reading.
b. Billing data, present and last 6/12 months' histories as per the meter make.
c. Load survey, 45 days/complete no. of days stored in the meter.
d. Tamper data, Settings/Configuration data

6.2.1 INSTANTANEOUS PARAMETERS. (EVERY 60 MINUTES/DAILY):

Key Features:

a. Compatible with various standard DLMS compliant Meters & legacy Non DLMS version meters which are compatible to modems (compatible).
b. Shall have meter detect and meter data read feature which enables communication with all popular Indian energy meters including DLMS/non DLMS meters using built-in meter specific protocol stack
c. Shall have auto restart feature with built-in watchdog timers and intelligence.
d. Shall have on-line tamper detection feature through which MODEM will continuously pole the meter for any new tamper and will send the event to the server and also to a set of pre-shock test
e. Programmed mobile numbers as an SMS alert.
f. Shall have Firmware over the air(FOTA) feature which will reduce the manual field visits and also save project time. The modem firmware shall be reprogrammed from the server remotely.
g. Remote start/stop and restart feature.
h. Auto recover feature in case of modem / network hanging.
i. Comprehensive self-diagnosis feature which will create log file with all at a periodicity and link check for communication.
j. On demand SMS request through SMS for Instantaneous Parameters.
k. Real time outages, alarms as alerts to server and to configured mobile numbers
l. Modem should be auto configurable by itself to the different make of DLMS meters if meters are changed i.e. plug & play.
m. Inbuilt 3 Phase Power supply as well as operational on single phase.
n. Automatic pushing of meter data at configured regular intervals.
o. Online monitoring of vital Instantaneous parameters like voltages, currents energies, powers, and power factors.
p. IP (internet protocol) based Communication, enabling simultaneous data access from thousands of Modems.
q. Shall use meter supported baud rate to read meter data and shall use maximum network supported baud rates to push the data to server.
r. Shall have a configuration over the air feature through which all the MODEM operational settings will be configured.
s. Shall have a configurable scheduled meter read and data transmit feature to enable grouping of the meters so that the loading on the server is equally distributed from all the field installed modems.
t. Shall have selective on-demand meter read feature through which server can send an on demand request to modem to read the selective parameters from the meter (for HT/ABT feature meters).

u. Shall have a configurable scheduled meter read and data transmit feature to enable grouping of the meters so that the loading on the server is equally distributed from all the field installed modems.
v. Shall have selective on-demand meter read feature through which server can send an on demand request to modem to read the selective parameters from the meter.
w. Modem should support for time synchronization on line from HES.

6.2.2 POWER SUPPLY SECTION:

a. Input specifications: -
b. The modems should be capable of operating on three phase supply drawn from the meter input itself. Auxiliary power supply will not be acceptable.
c. The MODEM shall have three phase AC input supply and should be capable of proper functioning within the power supply range of 90V AC P-P to470V AC P-P, 50 Hz so that same MODEM shall be used for HT, boundary and LT Tri vector meters.
d. However, the MODEM should also be capable of operating on single phase 230V, 50 Hz power supply. The MODEM shall be suitably protected against >6KV surges which are normally happens on the distribution network.
e. The Modem should be supplied with power cable, antenna with co-axial cable of suitable length, RS232 connecting cable.
f. The Modem should be capable to transfer the entire data of HT and LT Tri-vector Meter in less than 10 Minutes after connection is made assuming there is no line disturbance. Mounting adopter etc. and should be complete in all respects.
g. Average Power consumption of the MODEM shall not be more than 3.5 VA under idle and during data transfer.
h. The modem shall safely withstand the usual fluctuations arising during transient and persistent faults in the network without any damage to or mal-operation of the modems.
i. Withstand capacity against surges should be according to Indian conditions i.e. 6 kV
j. Input terminals: The power supply input shall be a suitable four core integrated cable coming out from AMR box and should be ended with proper termination of lugs.
k. The MODEM shall have capability to work under continuous power on condition.

6.2.3.1 4G SECTION: -

x. The 4G module shall comply with the following:
(a. The module shall operate in given Bands B1/B3/B5/B8/B34/B38/B39/B40/B41 given by Govt. of India to service provider in Karnataka for 4G.)

a. The module shall operate in dual Band GSM 900/1800MHz and frequencies given by Govt. of India to service provider in Karnataka for GPRS
b. The module shall support Point-to-Point
   - Text and PDU
   - Point to point (MT/MO)
   - Cell broadcast.

MODEM should support both data and SMS transmission.

6.2.4 SIM CARD SECTION: -

For placing the SIM Card, a SIM Card Holder shall be provided on the motherboard and shall be accessible only by opening/sliding the cover, MODEM shall not be opened for replacing the SIM card with sealing provision.

6.2.1. The SIM Card supported shall be of 1.8V/3V Interface.
6.2.2. Interlocking facility shall be provided under the device cove
6.2.3. SIM card slot/cover shall be sealed to avoid access to unauthorized person. The offered MODEM shall comply for ESD as per IEC61000-4-2.

6.2.5 COMMUNICATION INTERFACE & CAPABILITIES: -

a. A RS232 Serial Link supporting up to 115,200 bauds with an auto-building option shall be provided. However, the data transfer rate for remote meter reading shall depend on meter compatibility.
b. The RS232 output shall be provided on a 9-pin female/RJ11 connector which can be connected to electronic energy meter's optical / serial communication port through suitable communication cable.
c. The MODEM shall be suitably pre-configured for meter reading & transferring the data to the Data Centre.
d. MODEM should support both Data and SMS transmission.
e. Modem should be able to connect to frequencies available in Karnataka.
f. Modem should have built in Bluetooth module to communicate with Ext, Mobile Phone / Mobile App to facilitate to read / display/ push data MDAS.

6.2.6 APPLICABLE STANDARDS:

a. 6.8.1 Modem shall conform in all respects to the relevant International Standard Specifications with latest amendments there to unless otherwise specifically mentioned in this specification.
b. 6.8.2 The modem shall conform to following standards
   - EN60068-2-6 : Vibration 10-500 Hz Sine Vibration 2g
   - EN60068-2-30 : +40˚C and 95% Relative Humidity

- EN60068-2-1 : Cold (-10˚C)
- EN60068-2-2 : Dry Heat 60˚C
- EN60068-2-14 : Change in Temperature (-10˚C to +60˚C)
- IEC 68-2-27 : 2 shocks in both directions of three mutual perpendicular axes/400 ms duration 40g

c. The modem conforming to other internationally accepted standards, which ensure equal or higher quality than the standards mentioned above would also, is acceptable. In case of any difference between provisions of these standards and provisions of this specification, the stringent provisions shall prevail.

6.2.7 SERVICE CONDITIONS:

a. The modem to be supplied against this specification shall be required to operate satisfactorily and continuously (24 x 7) under the following tropical conditions.
b. The overall climatic condition is moderately hot, tropical, dusty and humid, conducive to rust and fungus growth.
   - Maximum Ambient Air Temperature : 60˚ Centigrade
   - Minimum Ambient Air Temperature : 0˚ Centigrade
   - Average Daily Ambient Air Temperature : 45˚ Centigrade
   - Maximum relative humidity : 10-95
   - Max. Altitude above mean sea level (m) : 4 Meters
   - Average Annual Rainfall (mm) : 1450 mm

6.2.8 RF SECTION: -

A SMA interface shall be provided on the MODEM to which either a fixed or a wired (with magnetic base) Dual Band Built-in Antenna of minimum -6dbi gain can be connected. Provision shall also be made to connect 10/14dbi high gain external yagi antenna to improve poor signal strength.

6.2.9 MEMORY:

a. The modem shall have sufficient memory to store resident software and data. The memory shall be scalable/ upgradable.
b. The modem shall have non-volatile memory, so that the registered parameters will not be affected by loss of power.
c. The non-volatile memory should have a minimum retention time of 10 years. Inbuilt 4MB non-volatile Data memory (Expandable to 8MB). Data memory for storing billing data, tamper information, voltages, currents, PF's etc.
d. Inbuilt non-volatile memory for storing unit identification, loading circle, meter number and configuration data.

6.2.10 RESIDENT SOFTWARE

a. The modem resident software should be reconfigurable in order to select any one or group of parameters for load survey. The bidder shall provide details of load survey duration with combination of parameters.
b. The above can be reconfigured from the base Computer Software.

6.2.11 NETWORK IDENTIFICATION SECTION

For determining the health of the device an LED shall be provided on the MODEM which will depict the current functioning status (power up/ registered in network/transmitting data).

6.2.12 DATA FEATURES FOR 4G MODULE

Modems:

Internet Services: TCP, UDP, HTTP, FTP

6.2.13 EMI/EMC SPECIFICATIONS: -The MODEM shall meet the following EMI/EMC specifications:

- Electrostatic Discharge IEC61000-4-2 (8 KV)
- Fast Transient Burst IEC61000-4-4
- Surges Immunity IEC61000-4-5
- Conducted Emission as per IEC 61000-3-2 and CISPR22 (class B)
- Radiated Emissions as per CISPR 22
- Radiate Immunity as per IEC 61000-4-3

6.2.14 MECHANICAL SPECIFICATIONS: -

The Mechanical Specifications of the MODEM shall be as follows:

a. MODEM shall be compact, rugged and reliable in design, as this device will be placed in a compact meter boxes. The bidder shall furnish detailed dimensional drawings of the modem and its mounting arrangement along with the offer.
b. Mounting Arrangement: Easy mounting arrangement with a hook Provision on the MODEM supported with the screw fixing arrangement. So that it will be comfortably fixed inside the meter Box.
c. The MODEM shall comply with IP55 rating.
d. Sealing Arrangement: The Top and Base Cover shall have a suitable sealing arrangement so that the MODEM cannot be tampered.
e. The MODEM shall be a compact model housed in a polycarbonate/ engineering plastic enclosure.
f. All parts, which are subject to corrosion under normal working conditions, shall be protected effectively. Any protective coating shall not be liable to damage by ordinary handling or damage due to exposure to air, under normal working conditions.

g. The modem shall be designed and constructed in such a way as to avoid introducing any danger in use and under normal conditions so as to ensure specially personnel safety against electric shock.

6.2.15 ENVIRONMENTAL SPECIFICATIONS

The MODEM shall meet the following environmental specifications:

- Operating Temperature: -30°C to +70°C
- Humidity: up to 95% RH (non – condensing).

6.2.16 FUNCTIONAL SPECIFICATIONS: -

6.17.1 The MODEM should be an intelligent device and capable of providing the following functionalities on 4G network:

6.17.2 The MODEM should be capable for long duration data transfer to central station as per configuration via suitable 4G MODEM software.

6.17.3 When the MODEM is busy in collecting the data from the meter and the request comes to get the data, then priority shall be given to request from central station software.

6.2.17 POWER OUTAGE NOTIFICATION: -

In the event of an outage, the MODEM should be able to send the outage alert to Data centre, there after SMS to predefined number to notify the outage event with date and time of occurrence/restoration.

a. The MODEM should have enough backup power to be capable of operating with SIM's 4G Service provider in the area. SIM's shall transmit the data **in 4G network.**

b. MODEM should be capable for continuous working for 24 hours every day under field conditions, even when enclosed in Metering Cubicles at Consumer sites.

c. Software shall have facility for Auto-Scheduler to enable automatic/Unattended data collection during night hours.

6.2.18 DATA TRANSFER IN PUSH MODE:

By default, MODEM should be configured for push mode of data transfer i.e., MODEM shall automatically establish a session with Static IP of MDAS Server at DC at specified time (once in an hour/day/week/month) for the purpose of meter reading This configuration of the MODEM shall be configurable remotely.

6.2.19 DATA TRANSFER IN PULL MODE:

a. In case the data is required on demand from the Data centre end (Server end), then connection shall be established from head end **(Meter data Acquisition system)** to the Modem.

b. User shall have option to get the meter data available in the memory of intelligent AMR, invoke the Modem to read & upload the meter data.

c. Provision to generate reports of successful automatic meter reading (AMR) Calls and unsuccessful AMR calls separately shall be provided.

d. Provision for flexible scheduling of meter reading by AMR software automatically on a pre-defined hourly, daily, weekly or monthly basis.

e. Provision shall be made to read the groups of energy meters in one go from the AMR software and the searchable by Meter number, or as a separate group.

6.2.20 CONDITIONS:

a. The modem should withstand all the surges which do happen normally in the network.

b. The vendor should retrieve the data from the modem and push the same to MDAS server as and when required by BESCOM.

c. Shall maintain adequate man power to maintain all the modems in healthy condition throughout the contract period

d. The bidder shall enter in to an agreement with service provider for flow of smooth data from the modem to High End Server (HES) throughout the contract period. Contractor should be responsible for security, privacy of data in all forms (i.e. in modem, MDAS, Communication State and any other place device/vendor is involved with data)

6.2.21 SAMPLE MODEM: Bidder must submit a sample 4G modem along with accessories as per BESCOM Technical Specification requirement & all fittings for connecting to the meter.

a. One sample AMR Modem conforming to this specification duly sealed along with the valid type test certificates & applicable software shall be submitted within 2 days of Bid Submission. The sample Modem shall be installed in our existing system and checked the compatibility with meter. The samples shall be complete in all respects and no deviations shall be allowed thereafter. It will be compulsory to submit sample modem along with the bid. To establish the compatibility with the existing system, the necessary accessories to be provided by the supplier along with the Modem without any additional cost.

b. Working of the above sample modem shall be checked on BESCOM meters. Only such bidders whose sample found to be successful in all respects shall be considered for opening the price bids.

7 SECTION VII SAMPLE FORMS

Form 1: Bidder's Organization details (To be uploaded on the Letterhead)

Sl. No.	Particulars	Details
1.	Name of the Bidder organization	
2.	Address of the Bidder	
3.	Status of the Company	
4.	Details of Incorporation of the Company	Date: Ref. #
5.	Details of Commencement of Business	Date: Ref. #
6.	Valid Sales tax registration no.	
7.	Valid Service tax registration no.	
8.	Permanent Account Number (PAN)	
9.	Name & Designation of the contact person to whom all references shall be made regarding this tender	
10.	Telephone No. (with STD Code)	
11.	E-Mail of the contact person:	
12.	Fax No. (with STD Code)	
13.	Website	

Yours faithfully,

Authorized Signature [In full and initials]

Name and Title of Signatory:

Company Name: Company Seal

Address:

Place:

Date:

Form 2: Declaration on not being blacklisted /defaulter

(To be submitted on the Letterhead of the Company)

To,

General Manager (ICT&MIS)
Bangalore Electricity Supply Company Limited,
Belaku Bhavana, Corporate Office, K.R Circle
Bangalore-560001, Karnataka, India

Dear Sir,

Sub: Tender invited for **"Augmentation and Comprehensive Maintenance of Existing Automatic Meter Reading (AMR) system for HT installations in RAPDRP areas of BESCOM for five years.**" as per terms and conditions stipulated in RFP vide enquiry no BESCOM/2025-26/IND0186/CALL-2 dated 28.01.2026

We confirm that our company is not blacklisted/defaulter for any fraudulent actions by BESCOM or by any state/central Government institution or any Public Sector Organization.

It is hereby confirmed that I/We are entitled to act on behalf of our company/ corporation/firm/ organization and empowered to sign this document as well as such other documents, which may be required in this connection.

Signature

Name & Designation

For and on behalf of

(Name of Applicant or Bidder)

Company Seal:

Place:

Date:

Form 3: Declaration of Acceptance of Terms and Conditions in RFP

(To be submitted on the Letterhead)

To,

General Manager (ICT&MIS)
Bangalore Electricity Supply Company Limited,
Belaku Bhavana, Corporate Office, K.R Circle
Bangalore-560001, Karnataka, India

Sub.: Tender invited for "**Augmentation and Comprehensive Maintenance of Existing Automatic Meter Reading (AMR) system for HT installations in RAPDRP areas of BESCOM for five years.**" as per terms and conditions stipulated in RFP vide enquiry no. BESCOM/2025-26/IND0186/CALL-2 dated 28.01.2026.

Dear Sir,

I have carefully gone through the Terms & Conditions contained in the RFP document [Tender enquiry no. BESCOM/2025-26/IND0186/CALL-2 dated 28.01.2026 "Augmentation and Comprehensive Maintenance of Existing Automatic Meter Reading (AMR) system for HT installations in RAPDRP areas of BESCOM for five years." I declare that all the provisions of this RFP/Tender Document are acceptable to my company. I further certify that I am an authorized signatory of my company and am, therefore, competent to make this declaration.

Yours faithfully,

Authorized Signature [In full and initials]

Name and Title of Signatory:

Company Name: Company Seal

Address:

Place:

Date:

Form 4: Letter of Proposal Submission

(To be submitted on the Letterhead)

To,

General Manager (ICT&MIS)
Bangalore Electricity Supply Company Limited,
Belaku Bhavana, Corporate Office, K.R Circle
Bangalore-560001, Karnataka, India

Dear Sir,

We, the undersigned, offer our proposal for "**Augmentation and Comprehensive Maintenance of Existing Automatic Meter Reading (AMR) system for HT installations in RAPDRP areas of BESCOM for five years.**" in accordance to the terms and conditions stipulated in RFP invited vide enquiry no BESCOM/2025-26/IND0186/CALL-2 dated 28.01.2026

We are hereby submitting our Proposal, which includes

a) Financial Proposal
b) Technical Proposal
c) Tender enquiry no
d) Bid processing fee of the prescribed amount (paid online as defined in the KPP platform)

We hereby declare that all the information and statements made in this Proposal are true and accept that any misinterpretation contained in it may lead to our disqualification.

If negotiations are held during the period of validity of the Proposal, we undertake to negotiate on the price bid, specified in form 6. Our Proposal is binding upon us and subject to the modifications resulting from Contract negotiations

We understand you are not bound to accept any Proposal you receive.

Yours faithfully,

Authorized Signature [In full and initials]

Name and Title of Signatory:

Company Name: Company Seal

Address

Place: Date:

Form 5: Performa for Contract Performance Guarantee

Performa for Bank Guarantee (For or Contract Performance Guarantee)

(To be stamped in accordance with Stamp Act, if any, of the Country of the issuing Bank)

Bank Guarantee no…… Date: / /

To,
General Manager (ICT&MIS)
Bangalore Electricity Supply Company Limited,
Belaku Bhavan, Corporate Office, K.R Circle
Bangalore-560001, Karnataka, India

Dear Sir,

In consideration of the.... *[Purchaser's Name]* …….. (Hereinafter referred to as the 'Purchaser' which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators and assignees) having awarded to M/s …….. *[Successful bidder's Name]* …… with its Registered/Head Office at..... (Hereinafter referred to as the 'Successful bidder'), which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assignees), a Contract by issue of the *Purchaser's* Letter of Acceptance no. ..... dated ..... and the same having been acknowledged by the Successful bidder, for …… [Contract sum in figures and words] for ……. *[Scope of Work]* and the Successful bidder having agreed to provide a Contract Performance Guarantee for the faithful performance of the entire Contract equivalent to Five percent (5%) of the Contract Price of the aforesaid work under the Contract to the Purchaser.

We..... [Name & Address of the Bank]..... having its Head Office at..... (hereinafter referred to as the 'Bank', which expression shall, unless repugnant to the context of meaning thereof, include its successors, administrators, executors and assignees) do hereby guarantee and undertake to pay the Purchaser, on demand any and all monies payable by the Successful bidder to the extent of ..... ……. (*) ..... as aforesaid at any time up to..... (@) ..... [days/month/year] without any demur, reservation, contest, recourse or protest and/or without any reference to the Successful bidder. Any such demand made by the Purchaser on the Bank shall be conclusive and binding notwithstanding any difference between the Purchaser and the Successful bidder or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. The Bank undertakes not to revoke this guarantee during its currency without previous consent of the Purchaser and further agrees that the guarantees herein contained shall continue to be enforceable till the Purchaser discharges this guarantee or till ……[day/month/year] whichever is earlier.

The Purchaser shall have the fullest liberty, without affecting in any way the liability of the Bank under this guarantee, from time to time to extend the time for performance of the Contract by the Successful bidder. The Purchaser shall have the fullest liberty, without affecting this guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they

might have against the Successful bidder, and to exercise the same at any time in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract between the Purchaser and the Successful bidder or any other course or remedy or security available to the Purchaser. The Bank shall not be released of its obligations under these presents by any exercise by the Purchaser of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Purchaser or any other indulgence shown by the Purchaser or by any other matter or thing whatsoever which under law would, but for this provision have the effect of relieving the Bank.

The Bank also agrees that the Purchaser at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Successful bidder and notwithstanding any security or other guarantee that the Purchaser may have in relation to the Successful bidder's liabilities.

Our liability under this Bank Guarantee shall not exceed ……..

This Bank Guarantee shall be valid up to and including ……

We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if the Purchaser serve upon Bank a written claim or demand within ninety (90) calendar days from the above mentioned expiry date of validity or, from that of the extended date.

Dated this…….. day of …….. 2026 at……..

WITNESS

(Name)

……..
……..

(Signature)

(Name)

…….. ……..

(Signature)

…… ……..

(Official Address) (Designation with Bank Stamp)

Attorney as per with Power of Attorney no……..

Note: The Stamp paper of Rs.500/- value shall be purchased in the name of guarantee issuing Bank.

Form 6: Price Bid (To be submitted through online mode only)

The Price should be entered/Keyed in the KPP portal in financial bid section. Bidders should not upload the Price bid form as part of technical Bid. If the price bid is uploaded the bidders will be disqualified.

The successful bidder shall furnish the breakup of the cost to the Office of General Manager (ICT&MIS) as per the below format:

Note: The bidder to key in the all-inclusive project cost only in the KPP portal.

Supply, Installation, operation and maintenance for 5 years

Sl. No.	Item Description	Quantity	Unit	Total cost (all inclusive) in Rs.
1	Supply, Installation(replacement), Commissioning of Modems .	11700	No	
2	Maintenance Cost for 5 years. (Shall not be less than 35% of the Total Project cost)	12689	60 MONTHS	
TOTAL PROJECT COST				
TOTAL PROJECT COST IN WORDS				

Note:

c. Supply includes Supply of 4G Modems, Cables and accessories for connecting to the meters for Data Collection and transmission infrastructure/device.
d. Installation, Commissioning of Modems includes Installation, Commissioning of Modems along with supply and configuration of SIM card, Integration to MDAS server and pushing data to MDM server.
e. Maintenance Cost for 5 years includes MDAS Charges, Data Charges, Connectivity Charges, Modem Troubleshooting (fault resolution)

Authorized Signature [In full and initials]: _____

Name and Title of Signatory: _____

Name of Consultancy: _____

Address: _____

Form 7: Banker's Certificate

ON BANKERS LETTER HEAD

……

FORMAT OF BANKER'S CERTIFICATE/ LINE OF CREDIT LETTER

[TO BE ISSUED IN THE LETTER HEAD OF BANK BRANCH]

Reference Number (SL No.) Place:

Date:

To:

[Name and Address of the beneficiary]

This is to certify that M/s. ……..(name of the customer) having their registered/ administrative office at …….. is a customer of our Bank and is engaged in ……(nature of activity). Their financial transaction with our Bank has been satisfactory. Therefore, we have extended credit facilities as below to meet their financial requirement towards the execution of the ……..(brief details of work) as per the Loan Policy of the Bank:

<table>
<tr><td>SL No.</td><td>Type of facility</td><td>Amount in Rs. (As on date of issue of certificate)</td></tr>
<tr><td>(1)</td><td>Cash at Bank</td><td>Rs……..</td></tr>
<tr><td>(2)</td><td>Term Deposits</td><td>Rs……..</td></tr>
<tr><td>(3)</td><td>Fund based Credit facility
(includes Overdraft)</td><td><table><tr><td>Sanctioned Limit</td><td>Utilized amount</td><td>Available Balance amount</td></tr><tr><td>Rs…..</td><td>Rs…..</td><td>Rs…..</td></tr></table></td></tr>
</table>

Note:- Date of the Certificate

Liquid Assets as on last date of previous month of tender inviting date or at a later date before submission of the bid.

Yours Faithfully,

BRANCH MANAGER

Form 8: Bidder of a country which shares a land border with India

To,

General Manager (ICT & MIS),
Bangalore Electricity Supply Company Limited,
Belaku Bhavan, Corporate Office, K.R Circle
Bangalore-560001, Karnataka, India

Dear Sir,

This is to certify that I have read the clause regarding restrictions on procurement from a Bidder of a country which shares a land border with India; I certify that this Bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this Bidder fulfils all requirements in this regard and is eligible to be considered. (Where applicable, evidence of valid registration by the Competent Authority shall be attached.)

Authorized Signature [In full and initials]:

Name and Title of Signatory:
Name of Company/Firm

Form 9: Manufacturer's Authorization form (MAF)

(To be submitted on the Letterhead)

To,

General Manager (ICT & MIS)
Bangalore Electricity Supply Company Limited, Corporate Office
Belaku Bhavan, K R Circle,
Bangalore-560001, Karnataka, India

Sub: Manufacturers Authorization Form for…….. Products

Dear Sir,

We …….. who are established and reputable manufactures of …….. having factories at……..and

……..do hereby authorize M/s ……..
(Name and address of Agent/Dealer/ Reseller) to offer their quotation, negotiate and conclude the contract with you against the above invitation for tender offer.

We confirm that our company (as a single unit, not the group) has had a turnover exceeding Rs ……. of last three financial years (i.e.2022-23, 2023-24 and 2024-25). We also confirm that we made profit in…….. years in last three financial years.

We here by extend support as per terms and conditions of the RFP and the contract for the equipment and services offered against this invitation for RFP offer by the above firm. In case of M/s……is out of service due to any reason, we will make alternative arrangement for the service and maintenance of our product on same terms and condition.

Yours faithfully,

Name and Title of Signatory:

M/s……..

(Name of manufactures)

Company Name: Company Seal

Address:

Place:

Date:

Annexure I: Mandatory General Technical Particulars

Sl. No	Parameters	Mandatory BESCOM's Requirement	Bidders Specifications	Mandatory compliance (Ref Page No)
1	Power Supply Input	range of 90V AC P-P to 470V AC P-P, 50 Hz		
2	Ambient Temperature	0° Centigrade to 60° Centigrade		
3	interfaces	RS232 or optical interface to energy meter		
4	Data interface	4G and Bluetooth 5.0		
5	Baud rate	115,200 bauds		
6	Antenna	6dBi magnetic base antenna		
7	SIM Card holder	SIM Card Holder shall be provided on the motherboard and shall be accessible only by opening/sliding the cover. 4G MODEM shall not be opened for replacing the SIM card with sealing provision.		
8	SMS	• Text and PDU		
9		• Point to point (MT/MO)		
10		• Cell broadcast.		
11	SIM interface	1.8V/3V Interface.		
12	VA Burden	Power consumption of the 4G MODEM shall not be more than 3.5 VA under idle and during data transfer		
13	Mounting Arrangement	Easy mounting arrangement with a hook Provision on the 4G MODEM supported with the screw fixing arrangement. So that it will be comfortably fixed inside the meter Box.		
14	Typical Dimension	The bidder shall furnish detailed dimensional drawings of the modem and its mounting arrangement along with the offer.		
15	Rating	Modem is capable for		

		working under continuous power on condition		
16	Optical port connector cable	The offered Modem should be supplied with power cable, antenna with co-axial cable of suitable length, RS 232 connecting cable.		
17	Surge Withstand Capacity (Type Test)	6KV		
18	Sealing arrangement of modem	The Top and Base Cover shall have a suitable sealing arrangement so that the 4G MODEM cannot be tampered		
19	Memory	4MB non-volatile Data memory (Expandable to 8MB)		
20	RTC	modem time should be synchronized with server time/IST		
21	Power Supply	Inbuilt 3 Phase Power supply as well as operational on single phase		
22	Data transmission	Internet Services: TCP, UDP, HTTP, FTP		
23	Firmware Upgrade	Through FOTA		
	LED indications:			
24	Power on	Red		
25	Transmitting data	Orange		
26	Receiving data	Green		
	Influence Quantities			
27	Immunity to Electro static discharge (ESD) (Type Test)	as per IEC61000-4-2		
28	Immunity to Fast Transient/Burst (EFT/B) (Type Test)	as per IEC61000-4-4		
29	Surge (Type Test)	IEC 61000-5:2014+A1:2017 (6 KV)		
30	Conducted Emission (Type Test)	as per CISPR 22		
31	Immunity to Radiated, Radio-Frequency, Electromagnetic Fields	IEC 61000-4-3: 2020		

	(Type Test)			
	Environmental			
32	Operating temperature (Type Test)	-10 degrees to +60 degrees (Dry Heat Test & Cold Test) IS 9000 Part III & IS 9000 Part IV		
33	Limit temp range for storage (Type Test)	-10 degrees to +70 degrees (Dry Heat Test & Cold Test) IS 9000 Part III & IS 9000 Part IV		
34	Humidity: Damp Heat Cyclic Test (Type Test)	Up to 95% Non-condensing: IS 9000 (Part V)		
	Mechanical			
35	Free Fall Test (Type Test)	IS 9000 (Part VII Sec 4)		
36	Vibration Test (Type Test)	IS 9000(Part VIII)		
37	Shock Test (Type Test)	IS 9000 (Part VII)		
38	Protection rating	IP 55		

The bidder shall upload OEM signed copy (each page) of the above with compliance to the intended modem to be supplied along with type test reports for all the parameters against which the standards are mentioned.

Annexure II: ABBREVIATIONS

BESCOM	Bangalore Electricity Supply Company
AMR	Automatic Meter Reading
HT	High Tension
BM	Boundary Meter
RAPDRP	Restructured Accelerated Power Development & Reform Programme
IPDS	Integrated Power Development Scheme
DWA	Detailed Work Award
ESCOM	Electricity Supply Company
GM	General Manager
DGM	Deputy General Manager
IT	Information Technology
LOI	Letter Of Intent
PO	Purchase Order
DC	Data Centre
DRC	Disaster Recovery Centre
RFB	Request For Proposal
GCC	General Conditions Of Contract
IFB	Invitation Of Bids
BMAZ	Bangalore Metropolitan Area Zone
BRAZ	Bangalore Rural Area Zone
CTAZ	Chitradurga Town Area Zone
O&M	Operations And Maintenance
MDAS	Meter Data Acquisition System
MDMS	Meter Data Management System
API	Application Power Interface
DLMS	Device Language Message Specification

MPLS	Multiprotocol Label Switching
MIS	Management Information System
MAAT	Minimum Average Annual Turnover
OTC	Over The Counter
GOK	Government Of Karnataka
IDAM	Identity Access Manager
CMRI	Common Meter Reading Instruments
SLA	Service Level Agreement
MTTR	Mean Time To Resolve
SCC	Special Conditions Of Control
CERT	Computer Emergency Response Team
HES	Head End System
POTA	Program Over The Air
GD	Gas Discharge
GST	Goods And Service Tax
SRS	System Requirement Specification